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THE RELATIONSHIP BETWEEN VEHICLE FUEL TEMPERATURE AND
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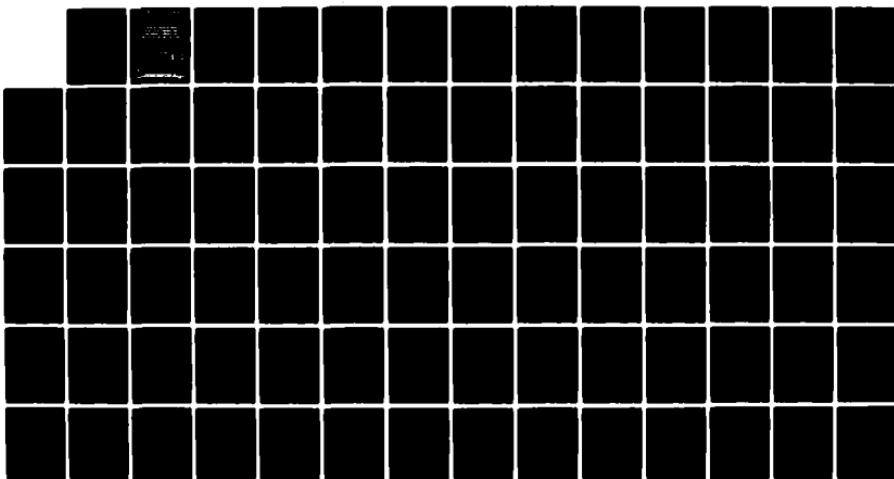
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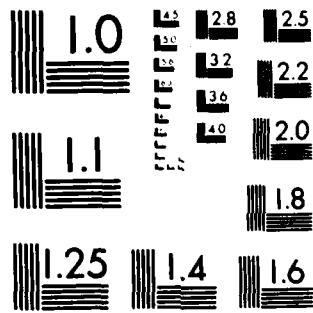
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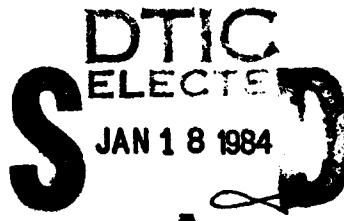
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**THE RELATIONSHIP BETWEEN
VEHICLE FUEL TEMPERATURE
AND AMBIENT TEMPERATURE
1981 CRC KAPUSKASING FIELD TEST**

FINAL REPORT OF
KURT H. STRAUSS, CONSULTANT

December 1983



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Contractor Report
DAAK-70-81-C-0128

**THE RELATIONSHIP BETWEEN VEHICLE FUEL TEMPERATURE
AND AMBIENT TEMPERATURE
1981 CRC KAPUSKASING FIELD TEST
(CRC PROJECT No. CD-15-69)**

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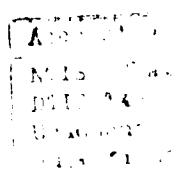
Final Report of Kurt H. Strauss, Consultant

This report covers an analysis of data generated by the CRC Low-Temperature Diesel Fuel Operability Test Program conducted at Kapuskasing, Ontario in 1981. Specifically, this analysis was limited to the relationship between vehicle fuel temperature and ambient temperature, and was conducted at the request of the U.S. Army (MERADCOM).

December 1983

ABSTRACT

A total of 214 overnight cooling curves, obtained on four diesel cars and three heavy-duty diesel trucks during January through April 1981 in Kapuskasing, Ontario, Canada, were analyzed to establish relationships between ambient and fuel tank temperatures. The closest relationship was found to be between fuel tank temperature at the end of an overnight cooldown and the average of the ambient temperature for the last three hours, the fuel being 2.2°C warmer on the average. The average difference between fuel tank and minimum ambient temperature was 3.6°C. No significant difference was observed between the final fuel tank temperatures of cars and the final fuel tank temperatures of the heavy-duty trucks, at the fill levels used in this program, when parked outdoors overnight.



A-1

TABLE OF CONTENTS

TEXT

ABSTRACT.....	1
I. INTRODUCTION.....	1
II. CONCLUSIONS.....	1
III. RECOMMENDATIONS.....	2
IV. DESCRIPTION OF DATA.....	2
A. Temperatures.....	2
B. Procedure.....	3
V. METHOD OF ANALYSIS.....	4
VI. DISCUSSION OF RESULTS.....	5
A. Ambient Temperatures.....	6
B. Test Site Versus Official Weather Data.....	6
C. Vehicle Fuel Temperatures.....	7
D. Vehicle Fuel Versus Ambient Temperatures.....	7
VII. SIGNIFICANCE OF RESULTS.....	9

TABLES

Table I - Ambient Versus Fuel Temperature.....	13
Table II - Ambient Versus Fuel Temperature Differences.....	14

FIGURES

Figure 1 - Overnight Cooldown - January 23-24, 1981.....	15
Figure 2 - Vehicle Temperature Difference End of Cooldown.....	16
Figure 3 - Effect of Vehicle Temperature Difference.....	17
Figure 4 - Final Vehicle Versus Final Ambient Temperature.....	18
Figure 5 - Final Vehicle Versus Minimum Ambient Temperature.....	19
Figure 6 - Slope of Cooling Curve (Last Three Hours) Versus Vehicle Temperature Difference at Cooldown.....	20
Figure 7 - Slope of Cooling Curve (Last Three Hours) and Final Temperature.....	21

APPENDICES

APPENDIX A - Activity and Data Summaries.....	A-1
APPENDIX B - Ambient and Tank Fuel Temperature During Overnight Soaks.....	B-1

I. INTRODUCTION

From January to April 1981, an extensive low-temperature diesel performance program was conducted with four passenger cars, three heavy-duty trucks, and eight fuels at Kapuskasing, Ontario, Canada, under the supervision and participation of the Coordinating Research Council's Heavy-Duty Fuel and Fuel Systems Group. The program was designed to define the low-temperature operability of each vehicle-fuel combination. Results were then correlated with a number of small-scale laboratory tests, and the findings were published in CRC Report No. 528, "1981 CRC Diesel Fuel Low-Temperature Operability Field Test."*

During this program, extensive records were taken of ambient and vehicle temperatures during the overnight cooldown periods. Because fuel temperature is critical to the low-temperature starting and warm-up characteristics of most diesel vehicle systems, the analysis covered by this report was proposed and undertaken to establish the relationships between ambient and vehicle fuel temperature in the CRC program. These relationships are intended to assist in the selection of appropriate fuels when ambient temperatures are predicted on the basis of past experience or are based on weather forecasts.

II. CONCLUSIONS

1. Temperatures of diesel fuel in vehicle fuel tanks at the end of an overnight cooldown can be predicted to be an average of 2.4°C above the ambient temperature at the end of the cooldown; however, data scatter was considerable, as indicated by a standard deviation of 2.5°C.
2. Use of a slightly more complex parameter, the average of the ambient temperature over the last three hours, decreases the average differential from 2.4 to 2.2°C. The change of 0.2°C, however, is not statistically significant.
3. The average difference between minimum ambient temperature during cooldown and the final fuel tank temperature was 3.6°C, or 1.2°C greater than the difference using final ambient temperature. Data scatter was approximately the same for both sets of measurements.

* Coordinating Research Council, Inc., "1981 CRC Diesel Fuel Low-Temperature Operability Field Test," CRC Report No. 528, September 1983.

4. The cooling period of 13.5 hours eliminated the effects of differences among vehicles in initial fuel temperatures, except when the initial temperature difference among vehicles exceeded 8°C.
5. No significant differences were noted between the final fuel tank temperatures of cars versus the final fuel tank temperatures of heavy-duty trucks when parked in the same outdoor environment.
6. The spread of final fuel temperatures between vehicles at the end of some cooldown cycles could not be related to any simple function of ambient temperature.

III. RECOMMENDATIONS

In future investigations of the relationship of vehicle fuel temperatures and ambient temperatures, measurements and consideration of the following parameters might be of assistance:

- Temperatures in other parts of the fuel system besides the tank.
- Measurement of all temperatures to nearest 0.2°C or better.
- Ground temperatures under the vehicle.
- Wind velocity and direction.

The effects of varying fill percentages on final fuel tank temperatures should also be investigated.

IV. DESCRIPTION OF DATA

A. Temperatures

For a complete description of the instrumentation and test procedures used in the driving cycle the reader is referred to CRC Report No. 528, cited above. The present study, dealing exclusively with the cooldown period, used only ambient and vehicle fuel tank temperatures, as these were the only temperatures recorded during the cooldown period.

"Ambient" temperature was the temperature measured in the center of the overnight parking area some three meters off the ground. In one phase of the analysis, these temperatures were compared with the official Weather Bureau temperatures taken at the Kapuskasing airport approximately 4 km away.

"Vehicle" temperature for the study was measured at a point several inches above the bottom and equidistant from the side walls of the fuel tank of each vehicle.

Ambient and vehicle temperatures were recorded every thirty minutes on a Doric Model 230A forty-channel digital data logger. These data were printed out to the nearest degree Celsius.

B. Procedure

Each individual test began with the vehicle preparation normally conducted the afternoon prior to the test. This included a complete drain of the test fuel after the vehicle had been warmed up to 10°C, a flush with the next test fuel, a second complete drain, and a filter change. Cars were then filled to 50 percent capacity with the next test fuel. The same volume of test fuel was placed into each truck. This resulted in the tanks being 16 to 33 percent filled, because of differences in tank volumes among trucks. (When a truck had two saddle tanks, only one was used in the program.)

Following the fuel change, the vehicles were warmed up by driving them for at least 24 km. This warm-up served to flush the system of residual fuel in the lines which had not been completely drained, and provided a consistent temperature from which to start the cooling period. Following the warm-up, the vehicles were parked in the open test compound for the overnight cooldown. Normally, there was no testing on Sunday, so cars were prepared on Saturday, and warmed up Sunday afternoon for testing on Monday. A summary of test schedules is given in Table A-1 of Appendix A.

In this analysis, 6:00 p.m. was taken as the start of cooldown and 7:30 a.m. as the end. Although a fuel tank temperature was measured at 8:00 a.m., a different, hand-held meter was used. Because of possible calibration differences, the 8:00 a.m. temperature was, therefore, not used in the analysis. Because only five data loggers used in the driving portion of the test were available, sometimes five vehicles were started at 8:00 and the remaining ones at 9:00 a.m. This additional cooldown period was not included in the analysis.

The tank and ambient temperatures were recorded half-hourly during the program and are shown in Tables B-I through B-XLV in Appendix B. The original data tapes are available at the CRC offices. The data include seven runs in which vehicles were cooled down, but no driving tests were made, because ambient temperatures were not in the desired range for the fuel-vehicle combinations which had been prepared for test. Four cooldown runs at the end of the program were not included, because the detailed data were not available. Summary sheets showing the data extracted from the original data are in Table A-II of Appendix A.

V. METHOD OF ANALYSIS

The following air temperatures were identified for each cooldown run:

- Minimum ambient ($T_{a \text{ min}}$) : the night's minimum temperature during cooldown
- Initial ambient (T_{ai}) : the ambient temperature at the beginning of cooldown (between 5:45 and 6:15 p.m.)
- Final ambient (T_{af}) : the ambient temperature at end of cooldown (between 7:00 and 7:30 a.m.)

The following temperatures were identified for each vehicle in each cooldown run:

- Minimum vehicle ($T_{v \text{ min}}$) : the vehicle's minimum temperature during cooldown
- Initial vehicle (T_{vi}) : the vehicle's fuel temperature at start of cooldown
- Final vehicle (T_{vf}) : the vehicle's final temperature at end of cooldown

Note: With very few exceptions, $T_{v \text{ min}} = T_{vf}$

The following parameters were then examined for relationships with final fuel temperature:

- Final ambient temperature (all vehicles)
- Final ambient temperature (cars only)
- Final ambient temperature (trucks only)
- Minimum ambient temperature (all vehicles)
- Minimum ambient temperature (cars only)
- Minimum ambient temperature (trucks only)
- Ambient temperature averaged over last three hours of cooldown
- Slope of ambient temperature during last three hours of cooldown

Also explored were the following factors:

- Spread of initial fuel temperature for each cycle with more than one vehicle
- Spread of final fuel temperature for each cycle with more than one vehicle
- Test site minimum ambient versus airport minimum ambient temperature
- Test site final ambient versus airport ambient temperatures at 7:30 a.m.

A number of runs did not identify individual vehicles. These runs could not be considered in some of the above-mentioned relationships.

VI. DISCUSSION OF RESULTS

There were forty-five overnight cooldown cycles. Of these, forty-one included two or more vehicles; four were conducted with a single vehicle. A total of 214 individual cooldown runs were carried out, 110 on the four cars, 61 on the three trucks, and 43 unidentified as to vehicle. The majority of unidentified runs were on cars. (The unidentified runs all were from those cooldown cycles which were not followed by driving tests.)

A. Ambient Temperatures

Minimum temperatures at the test site ranged from 0 to -28°C during the program, while initial cooldown ambient temperatures varied from a high of 7°C to an estimated low of -22°C . A comparison of daily minimum against final cooldown temperatures showed the two temperatures to be the same in twenty-one of the forty-five nights, while the minimum was 1°C lower on nine nights and 2°C lower on five nights. The daily minimum and the final ambient temperature at cooldown, therefore, were within 2°C during thirty-five out of forty-five nights. This relationship is reflected in several of the later analyses.

It should be noted that the minimum temperature referred to in this analysis is the minimum temperature experienced during cooldown. Normally, it would also be the daily minimum, but there were some days when the daily minimum occurred between 7:30 a.m. and 6:00 p.m.

The rather close connection between minimum and final ambient temperature existed even though the amount of overnight cooling from 6:00 p.m. to 7:30 a.m. varied greatly over the program. While overnight temperature changes ranged from 20 degrees cooling to 4 degrees warming, with a median of 5 degrees cooling, a total of thirty-seven out of forty-four* cycles were between a temperature drop of 1 to 13°C . Ambient temperature trends, therefore, were generally representative of moderate overnight temperature changes.

B. Test Site Versus Official Weather Data

A comparison was also made between ambient temperature at the test site and at the official weather station at the airport some 4 km away. Although this comparison only applies to this particular situation, it serves an illustrative purpose because, in most situations, past weather data tend to be the official weather records rather than temperatures taken at the site of interest. In a comparison of minimum temperatures, the test site minimum was the same or colder on all but three of the forty-five nights, the average being 1.0°C colder, while the largest difference was 5°C colder on two nights. Contrasting the 7:30 a.m. temperatures showed the test site to be an average of 0.8°C colder than the airport.

* One cycle did not include temperature data at the start of cooldown.

C. Vehicle Fuel Temperatures

A typical set of cooldown data for one overnight cycle is shown in Figure 1. These data illustrate the relatively common case in which the final fuel temperature was also the minimum fuel temperature. While a fairly wide temperature spread existed between the highest and the lowest initial vehicle fuel temperature, this spread decreased to 1°C (the minimum printout interval of the meter) at the end of cooldown. This spread in final fuel temperature for the forty-one cycles with two or more vehicles is illustrated in Figure 2. Here, the bar graph shows the percentage occurrence of each individual vehicle temperature difference, while the step graph indicates the cumulative percentage as the temperature increases. A total of 56 percent of all cycles were within 1°C; 85 percent were within 3°C. The largest difference at cooldown was 6°C, which was recorded 7 percent of the time, or a total of three times. Interestingly, the cycles with these large final differences were not the cycles with the largest initial temperature difference among vehicles. In fact, Figure 3 demonstrates no consistent relationship between initial and final temperature spread among vehicles.

An examination of the relationship of the vehicles with the highest initial fuel temperature and those with the highest final fuel temperatures was made; i.e., if the warmest vehicle at the start of cooldown was also the warmest at the end of cooldown. No consistent trend was noted when the temperature difference between the warmest and the coolest vehicle was less than 8°C at the start of cooldown. When the initial temperature spread was 8°C or greater, however, the same vehicle was the warmest at the end as well as at the beginning in six of eight cycles.

D. Vehicle Fuel Versus Ambient Temperatures

The next part of the analysis examined the relationships between final fuel and ambient temperatures. The entire vehicle fleet, as well as the separate car and truck groups, was checked. Figure 4 presents the comparison of final vehicle fuel versus final ambient temperature for each vehicle in the total fleet. A temperature difference of 0°C occurred 20 percent of the time, and a difference of 2°C about 18 percent of the time. A difference of 5°C was noted only about 6 percent of the time, and greater differences took place less often. Differences of 3°C or less were observed about 70 percent of the time. Comparing the same final vehicle temperature with minimum ambient temperatures in Figure 5 is interesting, because the bar graphs now peak at the higher differential of 4°C, and it is now necessary to include the 4°C difference to cover 70 percent of the occurrences. From 5°C on, however, the two cumulative curves are similar. These results are not unexpected, because minimum temperature was periodically lower than final temperature.

The same temperature sets were then compared on an average instead of a distribution basis. Table I shows an average difference between final vehicle and final ambient temperature of 2.4°C, while the average difference with minimum ambient was 3.6°C or about 1°C greater. Data scatter as quantified by the standard deviation of the 214 data points was about the same. A separate analysis showed the standard deviation of the difference of the two means to be 0.2°C. The two averages are, therefore, statistically significantly different. Average differences for the car and truck populations were also computed and were comparable to the total vehicle population. Those differences which do exist cannot be assigned purely to the difference in vehicle type, because cars and trucks did not necessarily go through the same cooling cycles, and the cooling curves are generally not comparable. The temperature differences for the "all vehicle" category are not directly comparable with those of the car and truck groupings, because the "all vehicle" category included a number of runs in which vehicle type was not identified.

The preceding analyses used a single ambient temperature, either minimum or final ambient, to establish relationships with vehicle fuel temperatures. To see whether the inclusion of a longer time span would result in a closer relationship, the usefulness of two other temperature functions was examined. Employing the average ambient over the last three hours of cooldown resulted in an average temperature difference of 2.2°C. Table II compares this result with the earlier data in Table I, and indicates the three hour difference to be slightly lower than the average based on final vehicle fuel temperature; however, the difference between these two averages is not statistically significant.

The slope of the ambient temperature during the last three hours was also reviewed to see whether it might help explain the variable spread of vehicle fuel temperatures at the end of cooldown; however, Figure 6 shows no such relationship. The same slope was also compared with the difference between final vehicle fuel and final ambient temperature in Figure 7. As might be expected, each case in which final ambient temperature was warmer than final vehicle fuel temperature (a negative ΔT on the abscissa) also had a positive or warming slope during the last three hours. Such positive slopes, however, also occurred in many more runs where vehicle fuel temperatures were equal to or above final ambient (positive portion of the abscissa). In general, therefore, the ambient temperature slope during the last three hours of cooldown could not be related to the temperature difference between final vehicle fuel temperature and final ambient temperature.

VII. SIGNIFICANCE OF RESULTS

Although the study included both diesel cars and trucks and a large number of cooldown cycles, the results must be considered in the light of certain limitations. Some data scatter is directly attributable to the 1°C printout accuracy of the recorder. Because the program emphasis was on driveability results, a number of parameters which can influence cooldown rates were not measured or were not systematically varied. The former include wind velocity and direction, ground radiation factors, and temperatures in other parts of the vehicle fuel systems. The latter include the effects of differing tank fill volumes (car tanks were always 50 percent filled, while truck tanks were 16 to 33 percent filled). The effects of differing fill levels, therefore, cannot be established. Fuel tank design was not investigated. Because no vehicle consistently showed the warmest or coldest final fuel tank temperatures, however, factors such as differences in tank design or location do not appear to have influenced the results.

The data analysis used only the entire overnight cooling period. In most runs, fuel tank temperatures became asymptotic at the end of cooldown. The effects of shorter soak periods could have been estimated from the data, but this was not done because of the questionable significance of the results.

TABLES
AND
FIGURES

TABLE I
AMBIENT VERSUS FUEL TEMPERATURE

	$\Delta(T_{final\ fuel} - T_{final\ ambient})^{\circ}C$					
	<u>All Vehicles</u>	<u>Cars</u>	<u>Trucks</u>	<u>All Vehicles</u>	<u>Cars</u>	<u>Trucks</u>
Average Difference	2.4	2.7	2.7	3.6	4.0	3.8
Standard Deviation*	2.5	2.5	2.7	2.3	2.2	2.5
Variance**	6.1	6.4	7.4	5.4	4.9	6.1

$$\begin{aligned}
 * \text{ Standard Deviation} &= \sqrt{\frac{\sum (X_i - \bar{X})^2}{n-1}} \\
 ** \text{ Variance} &= \frac{\sum (X_i - \bar{X})^2}{n-1}
 \end{aligned}$$

TABLE II
AMBIENT VERSUS FUEL TEMPERATURE DIFFERENCES

	$\Delta (T_{ff} - T_{fa})^{\circ}\text{C}^*$	$\Delta (T_{ff} - T_{ma})^{\circ}\text{C}^*$	$\Delta (T_{ff} - T_{\bar{a}})^{\circ}\text{C}^*$
Average Difference	2.4	3.6	2.2
Standard Deviation	2.5	2.3	2.1

* T_{ff} = Final fuel temperature

T_{fa} = Final ambient temperature

T_{ma} = Minimum ambient temperature

$T_{\bar{a}}$ = Average ambient (over last three hours) temperature

FIGURE 1
OVERNIGHT COOLDOWN
JANUARY 23-24, 1981

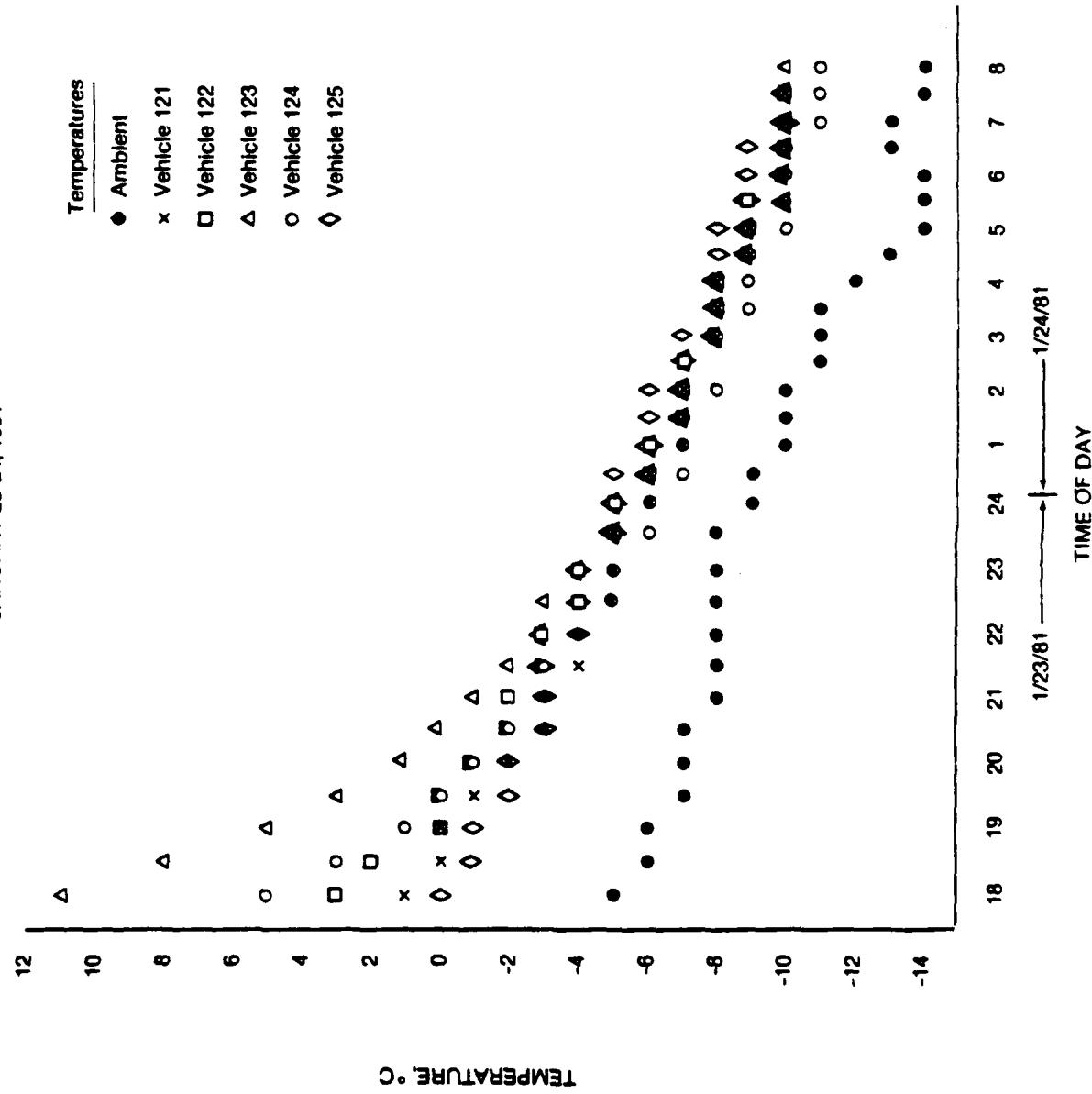


FIGURE 2

VEHICLE TEMPERATURE DIFFERENCE
END OF COOLDOWN

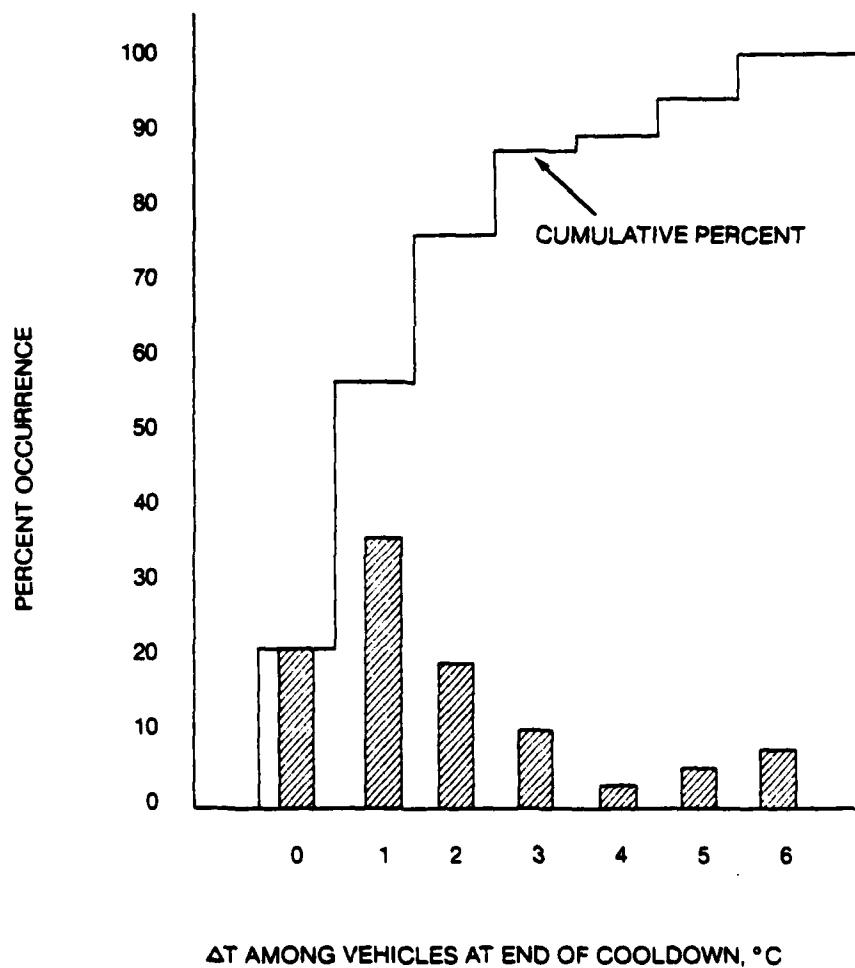


FIGURE 3
EFFECT OF VEHICLE TEMPERATURE DIFFERENCE

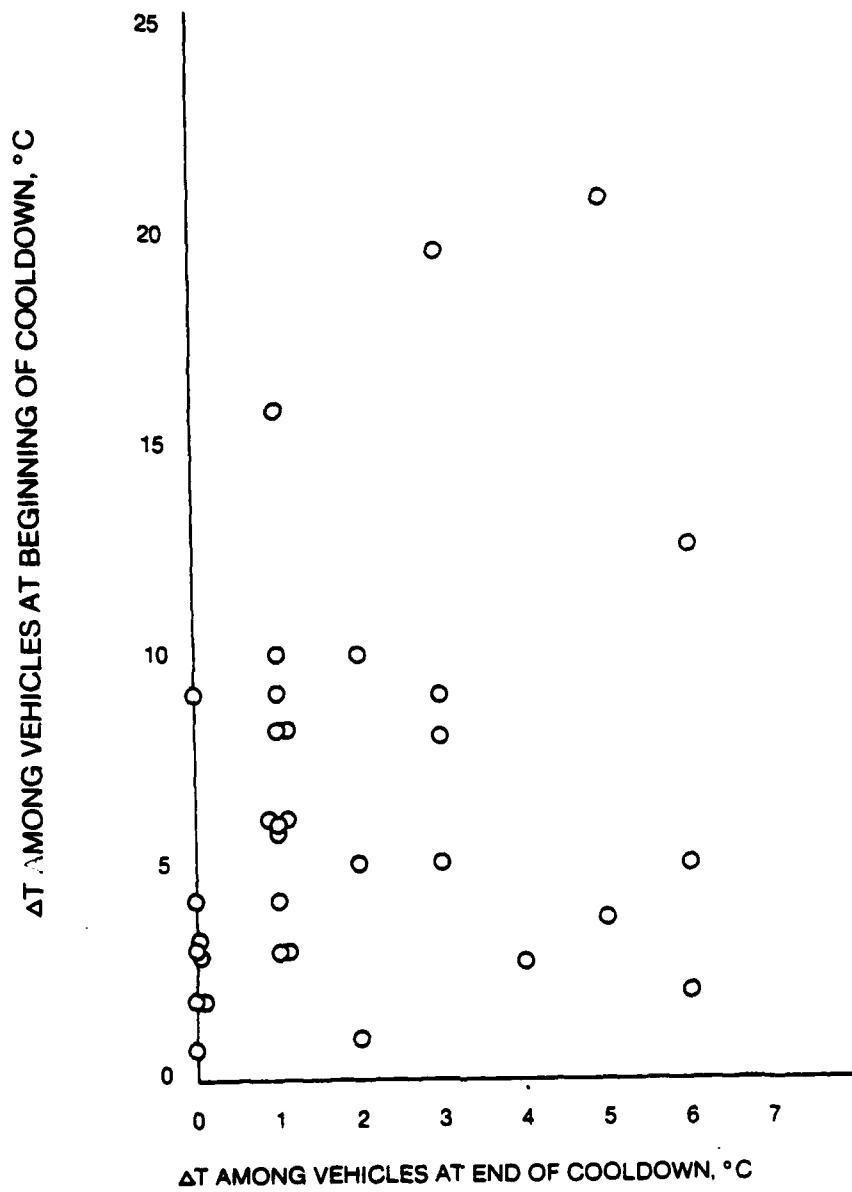


FIGURE 4
FINAL VEHICLE VERSUS FINAL AMBIENT TEMPERATURE
ALL VEHICLES

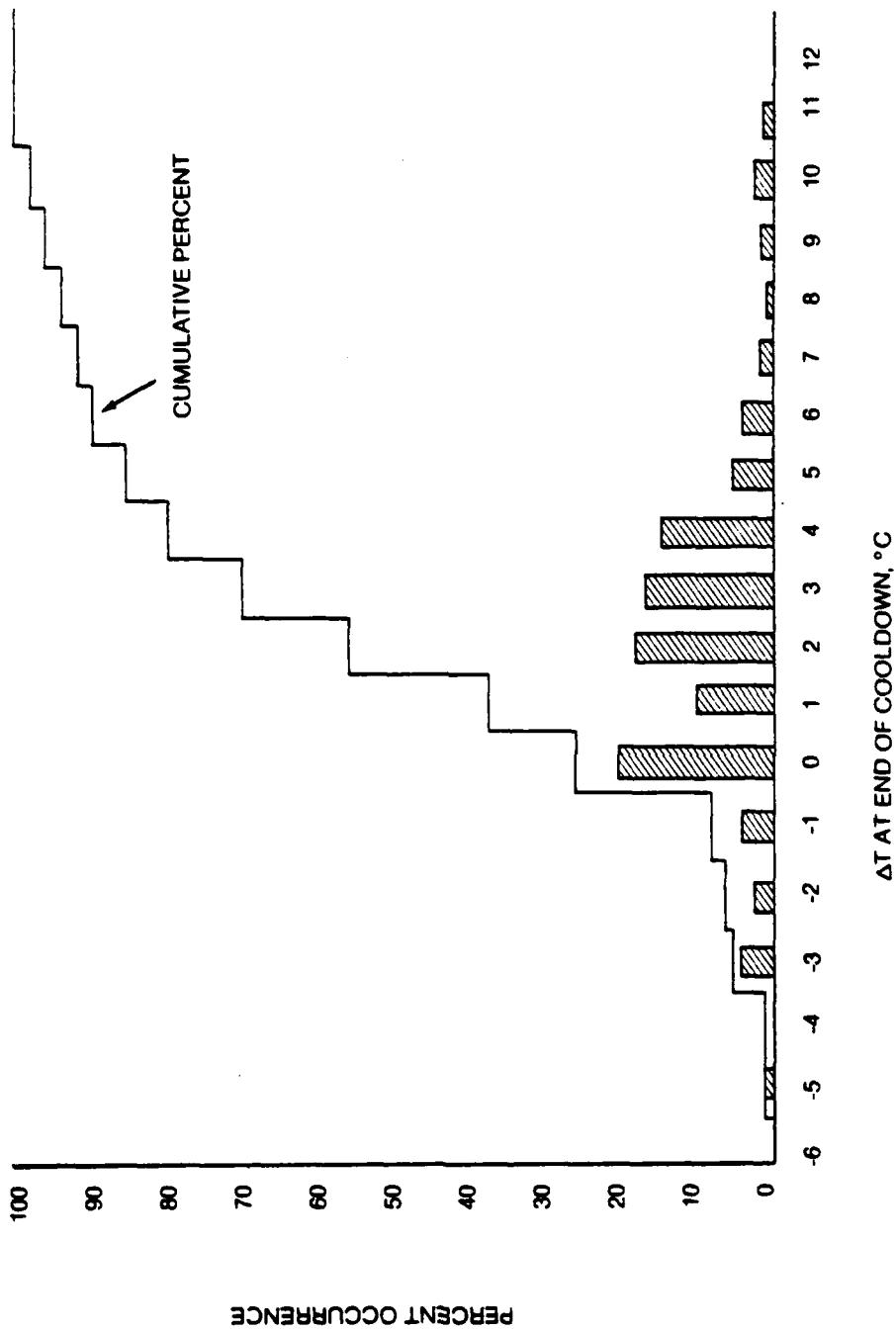


FIGURE 5
FINAL VEHICLE VERSUS MINIMUM AMBIENT TEMPERATURE
ALL VEHICLES

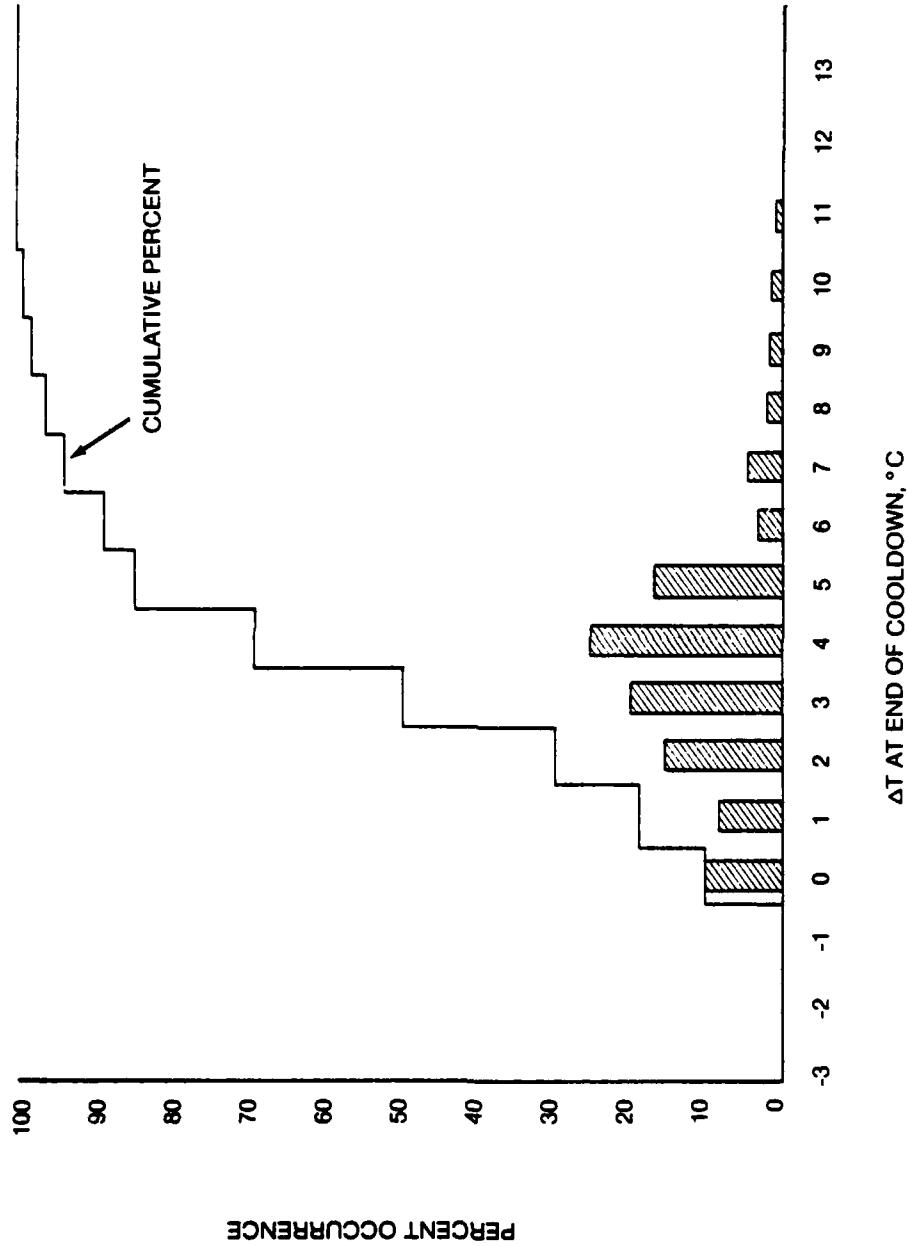


FIGURE 6
SLOPE OF COOLING CURVE (LAST THREE HOURS)
VERSUS VEHICLE TEMPERATURE DIFFERENCE AT COOLDOWN

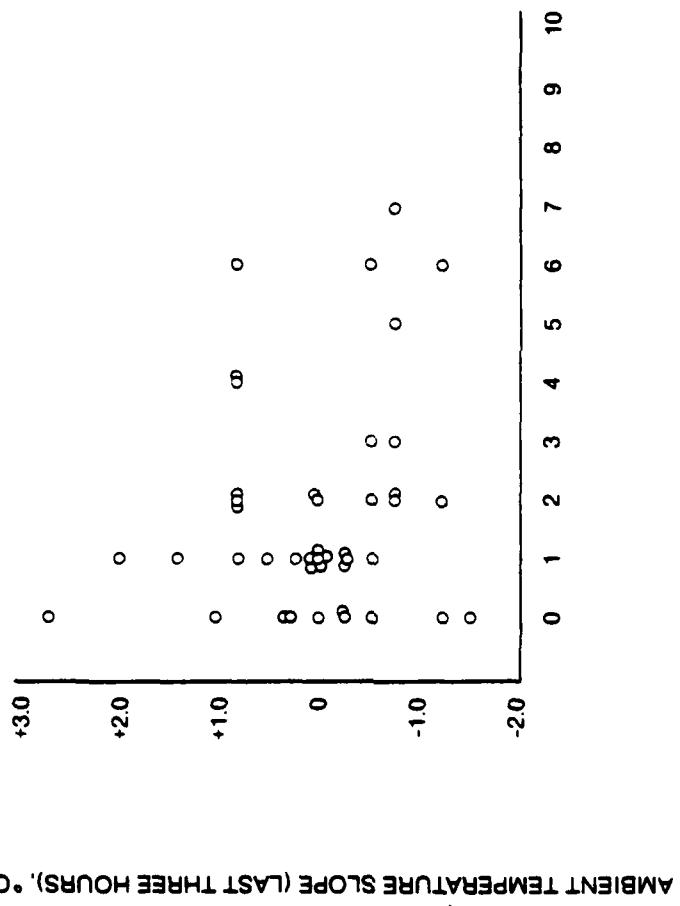
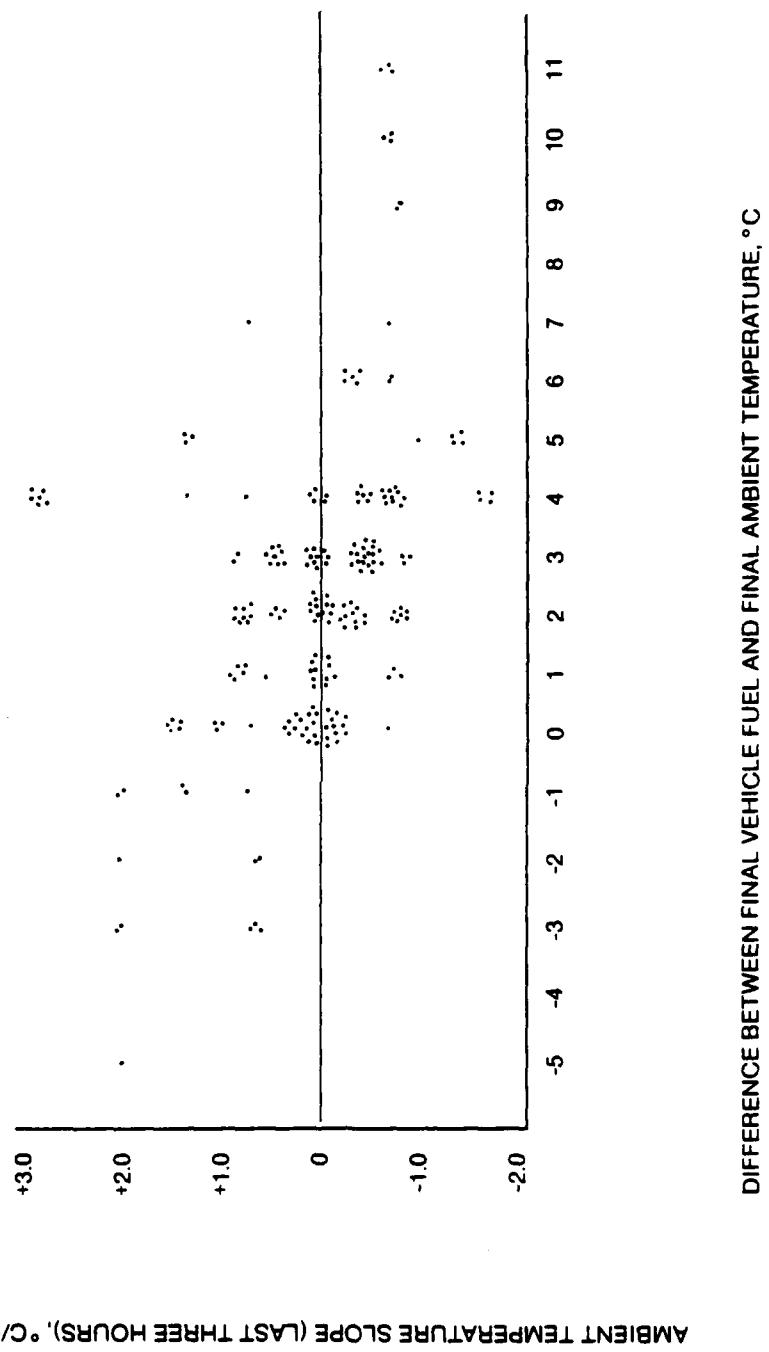


FIGURE 7
SLOPE OF COOLING CURVE (LAST THREE HOURS)
AND FINAL TEMPERATURE



APPENDIX A

ACTIVITY AND DATA SUMMARIES

TABLE A-1 - ACTIVITY SUMMARY

ID	DATE	1/21			1/22			1/23			1/24			1/25			1/26		
		ACT	DATA	ACT	DATA														
15	1/15	P	TO	P	TO	P	TO	VNA	NT	VNA									
16	16	P, BH	C, TO	P, BH	C, TO	P, BH	C, TO	VNA	NT	VNA									
17	17	F	C, TO	PR	NT	F	C, TO	PR	NT	VNA	NT	PR	NT	PR	NT	PR	NT	PR	
18	18	W, *	NT	VNA	NT	W, *	NT	VNA	NT	VNA	NT	VNA							
19	19	F	TO, C	P	NP	P	PD	P	NP	VNA	NT	F	NP	F	NP	PR	NT	PR	
20	20	F, BH	C, TO	F	C, PD	P, BH	C, PD	F, BH	C, NP	VNA	NT	P, BH	C, TO	P, BH	C, TO	NT, BH	F	NT	
21	21	NT, BH	C, MT	PR	NT	NT, BH	C,	H	H	H									
22	22	PR	NT	PR	NT	P	C, TO	P	C, OK	NT	WT	P	C, PD	P	PR	NT	PR	NT	
23	23	P	C, OK	P	C, OK	P	C, PD	P	C, OK	P, C	PD	P, BH	P, C	PD	P	H	NT	NT	
24	24	P	C, OK	P	C, PD	F	C, OK	F	C, OK	P, C	PD	F,	TO	H	TO	H	H	H	
25	25	W, *	NT	H	NT	NT													
26	26	F	C, OK	P	PD	P	NP	P	PR	C, PD	PR	PR							
27	27	P, BH	C, OK	P, BH	C, OK	P, BH	C, PD	F, BH	C, ND	H	NT	H, BH	C, NT	H	NT	H	NT	NT	
28	28	F, BH	OK	P, BH	TO	H	TO	H	NT	NT									
29	29	NT, BH	C, MT	PR	NT	P, BH	C, TO	H	TO	H	H	H							
30	30	P, BH	C, OK	P, BH	C, TO	P, BH	C, OK	P, BH	C, TO	C, TO									
31	31	P,	C, NP	P	C, NP	P	C, OK	P	C, OK	P	NP	P	C, PD	P	C, OK	P, BH	TO	TO	
32	32	W, *	NT	NT															
33	32	F, BH	C,	F, BH	C, OK	P, BH	C, PD	F, BH	C, PD	F, BH	C, PD	NT, BH	WT	H, BH	WT	H	NT	NT	
34	33	F, BH	PD	F, BH	OK	F, BH	ND	F, BH	TO	F, BH	OK	NT, BH	WT	H	WT	H	H	H	
35	34	NA	WT	PR	NT	F, BH	PD	PR	NT	NA	WT	NA	WT	NA	WT	NA	WT	WT	
36	35	PR	NT	P, BH	PD	P, BH	NP	P, BH	PD	NT	PR	NT	PR	NT	PR	H	H	H	
37	36	P	PD	NT	WT	WT	P	PD	NT	WT	F, BH	ND	H	ND	H	H	H	H	
38	37	F	OK	F	OK	P	RP	F	TO	E	PD	P	NP	P	PR	NT	PR	NT	
39	38	W, *	NT	W, *	WT	WT													
40	39	F, BH	NP	F, BH	OK	F, BH	PD	NT, BH	WT	WT									
41	40	F, BH	ED	NT, BH	ML	NT, BH	ML	P, BH	ED	WT	WT	WT, BH	ML	WT, BH	ML	WT, BH	WT	WT	
42	41	F, BH	EP	P, BH	OK	F, BH	OK	F, BH	TO	F, BH	OK	F, BH	OK	F, BH	OK	P, BH	WT	WT	

T.D. : TEST DATE

W: WASHUP

NT: NOT TESTED

H: NO PROBLEMS

P: PASS

C: COOL DOWN

PR: PARTIAL DATA

TO: TEMPERATURE ONLY

PD: PARTIAL DATA

VNA: VEHICLE NOT AVAILABLE

KEY:

P: PASS

C: COOL DOWN

PR: PARTIAL DATA

TO: TEMPERATURE ONLY

PD: PARTIAL DATA

VNA: VEHICLE NOT AVAILABLE

TABLE A-1 - ACTIVITY SUMMARY
(Continued)

P.	DATE	121		122		123		124		125		126		127	
		ACT	DATA	ACT	DATA	ACT	DATA	ACT	DATA	ACT	DATA	ACT	DATA	ACT	DATA
11	2/12	NA	WT	NA	WT	NA	WT	NA	WT	NA	WT	NA	WT	WT	WT
14	13	PR	NT	PR	NT	PR	NT	PR	NT	PR	NT	PR	NT	PR	NT
15	14	F,BH	NP,C	F,BH	OK,C	F,BH	PD,C	F,BH	PD,C	NT,BH	WT	WT	WT,BH	WT	WT
46	15	NA	WT	NA	WT	NA	WT	NA	WT	NA	WT	NA	WT	NA	WT
47	16	"	"	"	"	"	"	"	"	"	WT	"	"	"	"
48	17	"	"	"	"	"	"	"	"	NA	WT	"	"	"	"
49	18	"	"	"	"	"	"	"	"	"	"	"	"	"	"
50	19	"	"	"	"	"	"	"	"	"	"	"	"	"	"
51	20	"	"	"	"	"	"	"	"	"	"	"	"	"	"
52	21	"	"	"	"	"	"	"	"	"	"	"	"	"	"
53	22	"	"	"	"	"	"	"	"	"	"	"	"	"	"
54	23	"	"	"	"	"	"	"	"	"	"	"	"	"	"
55	24	"	"	"	"	"	"	"	"	"	"	"	"	"	"
56	25	PR	NT	PR	NT	PR	NT	PR	NT	PR	NT	PR	NT	PR	NT
57	26	P	C,OK	P	C,OK	P	C,OK	P	C,OK	P	C,OK	P	C,OK	P	C,OK
58	27	P	C,OK	P	C,OK	P	C,OK	P	C,OK	P	C,OK	P	C,OK	P	C,OK
59	28	PR	NT	PR	NT	PR	NT	PR	NT	PR	NT	PR	NT	PR	NT
60	3/1	W,*	NT	W,*	NT	W,*	NT	W,*	NT	W,*	NT	W,*	NT	W,*	NT
61	2	F	C,OK	F	C,OK	F	C,OK	F	C,OK	F	C,OK	F	C,OK	F	C,OK
62	3	F,BH	C,OK	F,BH	C,OK	F,BH	C,OK	F,BH	C,OK	F,BH	C,OK	F,BH	C,OK	F,BH	C,OK
63	4	F,BH	C,OK	F,BH	C,OK	F,BH	C,OK	F,BH	C,OK	F,BH	C,OK	F,BH	C,OK	F,BH	C,OK
64	5	F,BH	C,OK	NT,BH	C,WT	F,BH	C,OK	F,BH	C,OK	F,BH	C,OK	F,BH	C,OK	F,BH	C,OK
65	6	P	C,OK	P	C,OK	F	C,OK	F	C,OK	F	C,OK	F	C,OK	F	C,OK
66	7	NT	C,WT	NT	C,WT	NT	C,WT	NT	C,WT	NT	C,WT	NT	C,WT	NT	C,WT
67	8	W,*	NT	W,*	NT	W,*	NT	W,*	NT	W,*	NT	W,*	NT	W,*	NT
68	9	NT	C,WT	NT	C,WT	NT	C,WT	NT	C,WT	NT	C,WT	NT	C,WT	NT	C,WT
69	10	PR	NT	NA	WT	NA	WT	NA	WT	NA	WT	NA	WT	PR	NT
70	11	WT	C,WT	NA	WT	NA	WT	NA	WT	NA	WT	NA	WT	NA	C,WT

A-2

T.D. : TEST DATE W: WARMUP MP: NO PRINTOUT
P: PASS PR: PREP C: COOLDOWN TO: TEMPERATURE ONLY
F.F.: FAIL *: SUMMARY NT: NOT ENOUGH DATA V.WA: VEHICLE NOT AVAILABLE

WT: MECHANICAL FAILURE

PD: PARTIAL DATA

TABLE A-1 - ACTIVITY SUMMARY

(Continued)

P.	DATE	121			122			123			124			125			126			127		
		ACT	DATA																			
11	1/12	PR	NT	PR	NT	PR	NT	NA	WT	PR	NT											
12	13	NT	C,WT	P	C,OK	P	C,OK	NA	WT	PR	NT											
13	14	NT	C,WT	NT	C,WT	PR	NT	NA	WT	PR	NT											
14	15	W,*	NT	W,*	NT	W,*	NT	NA	WT	PR	NT											
15	16	P,BH	C,OK	P	P,BH	C,OK																
16	17	PR	NT	P,BH	C,OK	F,BH	C,OK	NA	WT	PR	NT	F,BH	C,OK	NA	WT	PR	NT	F,BH	C,OK	NA	WT	
17	18	P,BH	C,OK	P,BH	C,OK	NT,BH	C,OK	NA	WT	PR	NT	P,BH	C,OK	NA	WT	PR	NT	P,BH	C,OK	NA	WT	
18	19	NT,BH	C,WT	NT,BH	C,WT	NT,BH	C,WT	NA	WT	PR	NT	NT,BH	C,WT	NA	WT	PR	NT	NT,BH	C,WT	NA	WT	
19	20	NA	WT	NA	WT	WT	WT	NA	WT	PR	NT	NA	WT	PR	NT	PR	NT	NA	WT	PR	NT	
20	21	PR	NT																			
21	22	W,*	NT	W,*	NT	W,*	NT	NA	WT	PR	NT	W,*	NT	NA	WT	PR	NT	W,*	NT	NA	WT	
22	23	NT	C,WT	NT	C,WT	NT	C,WT	NT	C,WT	PR	NT	NA	WT	PR	NT	PR	NT	NA	WT	PR	NT	
23	24	PR	NT																			
24	25	P	C,OK	NT	C,WT	NT	C,WT	NT	C,WT	PR	NT	NA	WT	PR	NT	PR	NT	PR	NT	PR	NT	
25	26	PR	NT																			
26	27	P	C,OK	F	C,PD	F	C,OK	F	C,OK	PR	NT	C,OK	F									
27	28	P	C,OK	P	C,PD	P	C,OK	NA	WT	PR	NT	C,WT	NA	WT	PR	NT	PR	NT	PR	NT	PR	NT
28	29	W,*	NT	W,*	NT	NA	WT	PR	NT	PR	NT	W,*	NT	NA	WT	PR	NT	PR	NT	PR	NT	PR
29	30	NT	C,WT	NT	C,WT	PR	NT	NA	WT	PR	NT	C,WT	NT	C,WT	PR	NT	PR	NT	PR	NT	PR	NT
30	31	NA	WT	P	C,OK	P	C,OK	PR	NT	PR	NT	C,OK	P	C,OK								
31	32	PR	NT	PR																		
32	33	P	C,OK	P	C,OK	P	C,OK	P	C,OK	PR	NT	C,OK	P	C,OK								
33	34	PR	NT	PR																		
34	35	NA	WT	NA	WT	NA	WT	NA	WT	PR	NT	NA	WT	PR	NT	PR	NT	NA	WT	PR	NT	PR
35	36	PR	NT	PR																		
36	37	W,*	NT	W,*	NT	NA	WT	PR	NT	PR	NT	NA	WT	PR	NT	PR	NT	NA	WT	PR	NT	PR
37	38	WT	NT	WT	NT	WT	NT	NA	WT	PR	NT	NA	WT	PR	NT	PR	NT	NA	WT	PR	NT	PR
38	39	PR	NT	PR																		
39	40	NA	WT	NA	WT	NA	WT	NA	WT	PR	NT	NA	WT	PR	NT	PR	NT	NA	WT	PR	NT	PR
40	41	PR	NT	PR																		
41	42	P	C,OK	P	C,OK	P	C,OK	P	C,OK	PR	NT	C,WT	NT	C,WT								
42	43	NT	C,WT	NT	C,WT	NT	C,WT	NT	C,WT	PR	NT	C,OK	F	C,OK								
43	44	F	C,OK	F	C,NT	F	C,OK	F	C,OK	PR	NT	NA	WT	PR	NT	PR	NT	NA	WT	PR	NT	PR
44	45	NA	WT	NA	WT	NA	WT	NA	WT	PR	NT	NA	WT	PR	NT	PR	NT	NA	WT	PR	NT	PR
45	46	PR	NT	PR																		
46	47	WT	NT	WT	NT	WT	NT	NA	WT	PR	NT	WT	NA	WT	PR	NT	PR	NT	WT	PR	NT	PR
47	48	PR	NT	PR																		
48	49	WT	C,WT	WT	C,WT	WT	C,WT	WT	C,WT	PR	NT	C,WT	WT	C,WT								
49	50	NT	C,WT	NT	C,WT	NT	C,WT	NT	C,WT	PR	NT	C,WT	WT	C,WT								
50	51	TEST DATE	W: WARMUP																			

KEY:
 P: PASS
 F: FAIL.
 C: COOLDOWN
 R: BLOCK HEATED
 T.D.: TEST DATE
 P: PREP
 F: FAIL.
 *: SUNDAY
 **: MONDAY

TO: TEMPERATURE ONLY
 PD: PARTIAL DATA
 ND: NOT ENOUGH DATA
 VWA: VEHICLE NOT AVAILABLE

A-3

TABLE A-1 - ACTIVITY SUMMARY
(Continued)

T.D. : TEST DATE
P: PASS

W: WARMUP	P: NOT TESTED
PR: PREP	C: COOLDOWN
A: STRETCH	S: RECOVERY
	WARMUP

HP: NO PRINTOUT P1: MECHANICAL FAILURE
 TO: TEMPERATURE ONLY P2: PARTIAL DATA
 NO: NO SIGNIFICANT DATA P3: VEHICLE NOT AVAILABLE

A-4

TABLE A-II
DATA SUMMARYCaption Headings:Ambient Temperature Data

6:00P - start of cooldown between 5:45 and 6:15 PM
7:30A - end of cooldown between 7:00 and 7:30 AM
Min - minimum temperature at first occurrence during cooldown
Time - time of first minimum temperature occurrence
 Δt - duration of minimum temperature
 $\Delta T/h$ - slope of ambient temperature in last three hours
 T_{avg} - average temperature in last three hours

Vehicle Temperature Data

6:00P - temperature of highest temperature vehicle at start of cooldown
High Veh. - identification of high vehicle
6:00P - temperature of lowest temperature vehicle at start of cooldown
Low Veh. - identification of low vehicle
7:30A - temperature of highest temperature vehicle at end of cooldown
High Veh. - identification of high vehicle
7:30A - temperature of lowest temperature vehicle at end of cooldown
Low Veh. - identification of low vehicle
 $\Delta T/h$ high - slope of highest temperature in last three hours
 $\Delta T/h$ low - slope of lowest temperature in last three hours
 T_{avg} high - average of highest temperature in last three hours
 T_{avg} low - average of lowest temperature in last three hours

TABLE A-II - (Continued)

DATA SUMMARY

Time Period Day	Ambient Temperature Data						Vehicle Temperature Data										Final Vehicle Fuel Temperature							
	6:00P	7:30A	Min	Time	At	ΔT/h	T _{avg}	(T _{min} -T _{max})	6:00P	Veh.	Low	High	Low	High	Low	High	Low	High	Low	High	Low	High		
	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r	s	t	u	v		
15-16	-19	-21	-27	11P	(<i>1</i>)	+.3	-21.3	9	-17e	123	-19	121	-13	121	2	-.6	-.3	-18.0	-19.0	-19	-19	-15		
16-17	-15	-16	-19	6:30	(<i>1</i>)	+.6	-17.7	1 <i>5</i>	-4	123	-2	121	-12	121	1	-14	123	5	-.3	-.3	-13.2	-11.8	-12	-14
18-19	-1	-14	-14	8	1	-1.3	-12.3	0	9	122	3	121	-9	121	1	-9	121	1	-.3	-.3	-8.5	-8.5	-9	-9
19-20	-8	-28	-28	8	1 <i>5</i>	-.6	-27.0	0	5e	126	-2	121	-17	124	5	-19	121	5	-.1	-.6	-17.5	-15.5	-19	-18
20-21	-13	-7	-17	1	1	+.6	-8.4	<i>7</i>	2	123	0	122	-6	123	5	-10	122	5	+.6	+.4	-11.0	-8.0	-10	-9
21-22	0	-1	-3	4:30	1	+.6	-2.4	1	9	126	3	123	-1	123	4 <i>5</i>	-3	126	0	0	0	-1.0	-3.0	-1	-2
22-23	-6	-8	-10	3	2 <i>5</i>	+.6	-7.0	5	2 <i>1</i>	125	2	123	-4	125	1	-8	121	4 <i>5</i>	-.6	0	-4.1	-6.0	-8	-7
23-24	-5	-13	-14	5	1	+.3	-13.4	3	10	123	0	125	-10	125	5	-11	124	1	-.6	-.3	-9.0	-10.4	-10	-10
25-26	-4	-12	-12	8	(<i>1</i>)	-1.3	-10.0	0	1	122	0	-7	122	2	-9	126	(<i>1</i>)	-1	-1	-6.8	-7.3	-7	-7	
26-27	-15	-25	-25	8	(<i>1</i>)	-.6	-24.1	0	-5	125	-13	124	-21	121	1	-24	124	5	-.3	-.1	-20.4	-22.0	-21	-23
28-29	-22e	-19	-23	1:30	(<i>1</i>)	0	-19.9	6 <i>5</i>	-11e	122	-13e	124	-18	122	5	-19	121	5	0	0	-18.0	-19.0	-19	-19
29-30	-18	-24	-25	10	4	-.3	-23.0	10	-7	123	-11	121	-21	121	2	-21	121	2	-.3	-.3	-20.9	-20.9	-21	-21
30-31	-13	-16	-19	5:30	1	+1	-17.4	2 <i>5</i>	-2	122	-5	121	-16	121	1	-16	121	1	-.6	-.3	-15.4	-15.6	-16	-16
32-33	-16	-26	-26	6:30	(<i>1</i>)	-.3	-26.3	1 <i>5</i>	-8	121	-10	124	-23	121	(<i>1</i>)	-24	124	(<i>1</i>)	-1	-1	-21.4	-22.6	-22	-23
44-45	-11	-17	-17	7:30	(<i>1</i>)	-1.6	-13.9	5	-2	124	-6	122	-13	121	(<i>1</i>)	-13	121	(<i>1</i>)	-.6	-.6	-11.6	-11.6	-13	-13

A-6

TABLE A-II (Continued)

DATA SUMMARY

Time Period Day	Ambient Temperature Data											
	6:00P		7:30A		Min		Time		At	$\Delta t/h$	Avg	$(\Delta t_{min}/6A)$
	a	b	c	d	e	f	g	h	i	j	k	l
5-56	-3	-4	-5	10:30	54	0	-4	-4	-4	-4	9 ₅	
6-57	-3	-6	-6	8	(5)	-3	-7	-7	-7	-7	0	
7-58	-5	-13	-13	5	2	-3	-12.7	-12.7	-12.7	-12.7	2	
8-61	-3	-16	-17	5:30	15	-3	-15.7	-15.7	-15.7	-15.7	15 ₅	
1-62	-15	-19	-19	6:30	15	-6	-18.1	-18.1	-18.1	-18.1	15 ₅	
2-63	-8	-21	-22	3	(15)	0	-21	-21	-21	-21	4 ₅	
3-64	-5	-11	-11	2:30	5	0	-10.8	-10.8	-10.8	-10.8	5	
4-65	-4	-13	-14	1	1	0	-12.7	-12.7	-12.7	-12.7	6 ₅	
5-66	0	-5	-5	6	(15)	-6	-4.0	-4.0	-4.0	-4.0	1	
6-71	-2	-3	-6	8P	(5)	0	-3.0	-3.0	-3.0	-3.0	11	
1-72	0	-17	-17	7:30	(5)	-1.3	-16.0	-16.0	-16.0	-16.0	0	
2-73	-10	-22	-24	5	2	+	-23.1	-23.1	-23.1	-23.1	2 ₅	
3-74	-6	-16	-16	7:30	5	-1	-14.6	-14.6	-14.6	-14.6	5 ₅	
4-75	-14	-20	-23	3:30	(5)	+2	-24	-24	-24	-24	3 ₅	
5-76	-9	-28	-28	6:30	1	-6	-27	-27	-27	-27	1	
6-77	-10	-15	-16	3	3	+	-15.6	-15.6	-15.6	-15.6	4 ₅	
9-80	4	-7	-9	4:30	2	+	-7.9	-7.9	-7.9	-7.9	3	

Vehicle Temperature Data												Final Vehicle Fuel Temperature												
High			Low			High			Low			High			Low			High			Low			
6:00P	Veh.	6:00P	Veh.	7:30A	Veh.	7:30A	Veh.	8:00A	Veh.	8:00A	Veh.	9:00A	Veh.	9:00A	10:00A	Veh.	10:00A	11:00A	Veh.	11:00A	12:00P	Veh.		
1	j	k	l	m	n	o	p	q	r	s	t	u	v	w	x	y	z	aa	bb	cc	dd	ee	ff	
6	?	0	?	-3	7	4	-2	7	2	0	0	-3.0	-4.0	-3	-3	-4	-4	-3	-3	(?)				
10	128	1	124	-4	(128)	3	-6	(3)	2	0	-.3	-4.0	-5.7	-6	-6	-5	-6	-6	-6	-8				
4	128	-1	(3)	-8	128	1	-11	125	2	-.3	-.3	-7.6	-10.7	-9	-9	-9	-10	-11	-11	-8				
							126																	
2	123	0	126	-10	128	1	-16	126	1	-.6	-.6	-9.4	-15.1	-13	-13	-13	-13	-13	-13	-16	-10			
				128																				
16	126	-10	125	-14	126	1	-19	125	1	-.3	-.1	-13.6	-17.3	-15	-15	-19	-16	-14	-16	-17				
5	122	0	(3)	-17	111	1	-19	123	2	-.3	-.3	-16.4	-19.6	-17	-17	-19	-17	-17	-17	-18	-17			
11	128	1	121	-8	128	1	-10	126	2	-.3	-.3	-7.6	-9.7	-9	-9	-9	-10	-9	-10	-9	-10	-8		
9	128	0	122	-10	125	2	-11	(5)	2	-.3	0	-9.9	-10.0	-11	-11	-11	-11	-10	-11	-10	-11	-10		
4	?	1	?	-2	?	(1)	-3	?	2	-.6	-.3	-1.0	-2.6	-2	-1	-1	-1	-1	-1	-1	-1	-1	-1	
0	126	0	126	-3	126	10	-3	126	10	0	0	-3.0	-3.0											
6	128	1	123	-9	128	1	-15	123	1	-.6	-1.0	-7.7	-13.0	-11	-15	-13	-15	-13	-15	-9				
10	128	-2	125	-15	128	1	-21	125	1	-.6	-.6	-14.3	-19.4								-21	-15		
4	128	4	128	-11	128	1	-11	128	1	-1	-1	-9.3	-9.3											
-8	128	-11	126	-21	125	2	-22	126	1	-.3	+.6	-20.7	-23.3	-23	-23	-25	-23	-23	-25	-21	-22	-21		
1	125	-3	122	-17	123	(1)	-24	122	(1)	-.6	-.6	-15.6	-23.6	-18	-22	-22	-18	-22	-22	-17	-21	-22		
0	128	-4	125	-12	122	2	-14	128	2	-.6	-.6	-11.8	-13.4	-14	-17	-17	-14	-17	-14	-14	-14			
9	126	9	126	-4	126	(1)	-4	126	(1)	-4	-4	-12.6	(1)	-6	-6	-2.4	-6	-6	-6	-2.4	-4			

TABLE A-II (Continued)

DATA SUMMARY

APPENDIX B

AMBIENT AND TANK FUEL TEMPERATURE
DURING OVERNIGHT SOAKS

TABLE B-I

AMBIENT AND TANK FUEL TEMPERATURES DURING OVERNIGHT SOAK: 1/15-16/81FUEL 104

<u>Date</u>	<u>Time</u>	Temperatures, °C						
		<u>Ambient</u>	<u>C-121</u>	<u>C-122</u>	<u>C-123</u>	<u>C-124</u>	<u>C-125</u>	<u>C-126</u>
1/15	8:00PM	-19						
	8:30PM	-20						
	9:00PM	-21						
	9:30PM	-22						
	10:00PM	-24						
	10:30PM	-26						
	11:00PM	-27						
	11:30PM	-26						
1/16	12Midnight	-25	-13					
	12:30AM	-25	-14					
	1:00AM	-23	-15	-13				
	1:30AM	-23	-16	-14	-13			
	2:00AM	-23	-17	-14	-14			
	2:30AM	-22	-17	-15	-15			
	3:00AM	-22	-17	-16	-16			
	3:30AM	-22	-18	-16	-16			
	4:00AM	-21	-18	-17	-16			
	4:30AM	-21			-17			
	5:00AM	-21	-18					
	5:30AM	-21						
	6:00AM	-22	-19	-18				
	6:30AM	-22			-18			
	7:00AM	-21	-19	-18				
	7:30AM	-21			-18			
	8:00AM	-21	-19		-19			
	8:30AM	-20		-19				
	9:00AM	-19	-19	-19	-19			
	9:30AM	-19						
	10:00AM	-18	-19	-19	-19			
	10:30AM	-18						
	11:00AM	-16	-18	-18	-18			

TABLE B-II

AMBIENT AND TANK FUEL TEMPERATURES DURING OVERNIGHT SOAK: 1/16-17/81FUEL 102

<u>Date</u>	<u>Time</u>	Temperatures, °C						
		<u>Ambient</u>	<u>C-121</u>	<u>C-122</u>	<u>C-123</u>	<u>C-124</u>	<u>C-125</u>	<u>C-126</u>
1/16	6:30PM	-15	- 2		- 4			
	7:00PM	-15	- 3		- 4			
	7:30PM	-15	- 4		- 5			
	8:00PM	-15	- 5		- 6			
	8:30PM	-16	- 6		- 7			
	9:00PM	-15	- 7		- 8			
	9:30PM	-16	- 7		- 8			
	10:00PM	-15	- 8		- 9			
	10:30PM	-16	- 9		-10			
	11:00PM	-16	- 9		-10			
	11:30PM	-15	- 9		-10			
1/17	12Midnight	-15	-10		-11			
	12:30AM	-15	-10		-11			
	1:00AM	-15	-10		-11			
	1:30AM	-15	-11		-11			
	2:00AM	-15	-11		-11			
	2:30AM	-15	-11		-12			
	3:00AM	-15	-11		-12			
	3:30AM	-16	-11		-12			
	4:00AM	-16	-11		-12			
	4:30AM	-18	-11		-12			
	5:00AM	-18	-11		-13			
	5:30AM	-17	-12		-13			
	6:00AM	-18	-12		-13			
	6:30AM	-19	-12		-13			
	7:00AM	-18	-12		-13			
	7:30AM	-18	-12		-14			
	8:00AM	-16	-12		-14			

TABLE B-III

AMBIENT AND TANK FUEL TEMPERATURES DURING OVERNIGHT SOAK: 1/18-19/81FUEL 102

<u>Date</u>	<u>Time</u>	Temperatures, °C					
		Ambient	C-121	C-122	C-123	C-124	C-125
1/18	7:00PM	- 2	2	6	6		
	7:30PM	- 4	1	5	5		
	8:00PM	- 5	0	4	4		
	8:30PM	- 6	0	3	3		
	9:00PM	- 8	0	2	1		
	9:30PM	- 8	- 1	1	0		
	10:00PM	- 8	- 2	0	0		
	10:30PM	- 8	- 2	0	0		
	11:00PM	- 9	- 3	- 1	- 1		
	11:30PM	- 8	- 4	- 1	- 2		
1/19	12Midnight	- 9	- 4	- 2	- 3		
	12:30AM	- 8	- 5	- 3	- 3		
	1:00AM	-10	- 5	- 3	- 4		
	1:30AM	-11	- 6	- 4	- 5		
	2:00AM	-11	- 6	- 4	- 5		
	2:30AM	-11	- 7	- 5	- 6		
	3:00AM	-10	- 7	- 6	- 6		
	3:30AM	-10	- 7	- 6	- 7		
	4:00AM	-10	- 8	- 6	- 7		
	4:30AM	-10	- 8	- 7	- 7		
	5:00AM	-11	- 8	- 7	- 8		
	5:30AM	-10	- 8	- 7	- 8		
	6:00AM	-11	- 8	- 8	- 8		
	6:30AM	-13	- 9	- 8	- 8		
	7:00AM	-13	- 9	- 8	- 9	-10	
	7:30AM	-14	- 9	- 9	- 9	-10	
	8:00AM	-14	- 9	- 9	- 9	-10	

TABLE B-IV

AMBIENT AND TANK FUEL TEMPERATURES DURING OVERNIGHT SOAK: 1/19-20/81FUEL 102: VEHICLE C-126FUEL 106: VEHICLES C-121, C-122, C-123, C-124

<u>Date</u>	<u>Time</u>	<u>Temperatures, °C</u>						
		<u>Ambient</u>	<u>C-121</u>	<u>C-122</u>	<u>C-123</u>	<u>C-124</u>	<u>C-125</u>	<u>C-126</u>
1/19	5:00PM	- 7	3		2	2		
	5:30PM		2	- 2	1	0		
	6:00PM	- 8	0	- 3	0	- 1		
	6:30PM	- 9	- 1	- 3	- 1	- 2		
	7:00PM	- 9	- 2	- 3	- 2	- 3		
	7:30PM	-10	- 3	- 4	- 3	- 5	4	
	8:00PM	-10	- 4	- 4	- 4	- 5	3	
	8:30PM	-10	- 5	- 5	- 5	- 6	2	
	9:00PM	-11	- 6	- 5	- 5	- 7	1	
	9:30PM	-11	- 7	- 6	- 6	- 8	0	
	10:00PM	-13	- 8	- 7	- 7	- 8	- 1	
	10:30PM	-14	- 8	- 8	- 8	- 9	- 2	
	11:00PM	-16	- 9	- 8	- 8	-10	- 3	
	11:30PM	-16	-10	- 9	- 9	-10	- 4	
1/20	12Midnight	-17	-10	-10	- 9	-11	- 5	
	12:30AM	-18	-11	-10	-10	-12	- 6	
	1:00AM	-20	-12	-11	-11	-12	- 7	
	1:30AM	-19	-12	-11	-11	-13	- 8	
	2:00AM	-21	-13	-12	-12	-13	- 9	
	2:30AM	-22	-13	-13	-12	-14	-10	
	3:00AM	-22	-14	-13	-13		-11	
	3:30AM	-23	-14	-14	-13		-12	
	4:00AM	-24	-15	-14	-14		-13	
	4:30AM	-26	-16	-15	-14		-14	
	5:00AM	-26	-16	-15	-15		-14	
	5:30AM	-27	-17	-16	-15		-15	
	6:00AM	-27	-18	-17	-16		-16	
	6:30AM	-27	-18	-17	-17		-17	
	7:00AM	-27	-19	-18	-17		-18	
	7:30AM	-28	-19	-18	-17			

TABLE B-V

AMBIENT AND TANK FUEL TEMPERATURES DURING OVERNIGHT SOAK: 1/20-21/81FUEL 106

Date	Time	Temperatures, °C						
		Ambient	C-121	C-122	C-123	C-124	C-125	C-126
1/20	6:00PM	-11	2	0	- 6	0		
	6:30PM	-12	0	0	-10	- 1		
	7:00PM	-11	0	- 2	-10	- 2		
	7:30PM	-12	- 1	- 2	-10	- 3		
	8:00PM	-13	- 2	- 3	-12	- 4		
	8:30PM	-13	- 4	- 5	-12	- 5		
	9:00PM	-14	- 5	- 5	-14	- 6		
	9:30PM	-14	- 5	- 6	-15	- 7		- 6
	10:00PM	-15	- 6	- 6	-16	- 7		- 7
	10:30PM	-15	- 7	- 7	-15	- 8		- 7
	11:00PM	-15	- 8	- 8	-16	- 9		- 8
	11:30PM	-14	- 9	- 9	-16	- 9		- 8
1/21	12Midnight	-16	- 9	- 9	-17	-10		- 9
	12:30AM	-16	-10	-10	-18	-10		-10
	1:00AM	-17	-10	-10	-18	-11		-10
	1:30AM	-17	-11	-11	-18	-11		-11
	2:00AM	-17	-11	-11	-17	-12		-11
	2:30AM	-14	-12	-12	-14	-12		-11
	3:00AM	-12	-12	-12	-12	-12		-11
	3:30AM	-12	-12	-12	-12	-12		-12
	4:00AM	-10	-12	-12	-10	-12		-12
	4:30AM	-10	-12	-12	-10	-12		-12
	5:00AM	- 9	-12	-12	- 9	-12		-11
	5:30AM	-10	-12	-11	- 9	-11		-11
	6:00AM	- 9	-11	-11	- 9	-11		-11
	6:30AM	- 9	-11	-11	- 8	-11		-11
	7:00AM	- 8	-11	-11	- 8	-10		-11
	7:30AM	- 7	-10	-10	- 7	-10		-11
	8:00AM	- 7	-10	-10	- 6	- 9		

TABLE B-VI

AMBIENT AND TANK FUEL TEMPERATURES DURING OVERNIGHT SOAK: 1/21-22/81FUEL 104: VEHICLE C-126FUEL 105: VEHICLES C-123 & C-124

<u>Date</u>	<u>Time</u>	<u>Temperatures, °C</u>						
		<u>Ambient</u>	<u>C-121</u>	<u>C-122</u>	<u>C-123</u>	<u>C-124</u>	<u>C-125</u>	<u>C-126</u>
1/21	6:00PM	0			3	8		8
	6:30PM	0			3	6		7
	7:00PM	0			3	4		6
	7:30PM	0			2	3		5
	8:00PM	- 1			2	2		4
	8:30PM	- 1			1	2		3
	9:00PM	- 1			1	1		2
	9:30PM	- 1			1	0		2
	10:00PM	- 1			0	0		1
	10:30PM	0			0	0		0
	11:00PM	- 1			0	0		0
	11:30PM	- 1			0	0		0
1/22	12Midnight	- 1			0	- 1		0
	12:30AM	- 2			0	- 1		0
	1:00AM	- 1			0	- 1		0
	1:30AM	- 2			0	- 1		- 1
	2:00AM	- 2			0	- 1		- 1
	2:30AM	- 2			- 1	- 2		- 1
	3:00AM	- 2			- 1	- 2		- 1
	3:30AM	- 2			- 1	- 2		- 1
	4:00AM	- 2			- 1	- 2		- 1
	4:30AM	- 2			- 1	- 2		- 2
	5:00AM	- 2			- 1	- 2		- 2
	5:30AM	- 2			- 1	- 2		- 2
	6:00AM	- 2			- 1	- 2		- 2
	6:30AM	- 2			- 1	- 2		- 2
	7:00AM	- 1			- 1	- 2		- 2
	7:30AM	- 2			- 2	- 2		- 2

TABLE B-VII

AMBIENT AND TANK FUEL TEMPERATURES DURING OVERNIGHT SOAK: 1/22-23/81FUEL 105

<u>Date</u>	<u>Time</u>	Temperatures, °C					
		<u>Ambient</u>	<u>C-121</u>	<u>C-122</u>	<u>C-123</u>	<u>C-124</u>	<u>C-125</u>
1/22	7:30PM	- 5	4		2	2	20
	8:00PM	- 6	2		1	1	21
	8:30PM	- 6	1		0	0	20
	9:00PM	- 6	0		0	0	19
	9:30PM	- 7	- 1		- 1	- 1	16
	10:00PM	- 7	- 2		- 1	- 2	14
	10:30PM	- 8	- 3		- 2	- 3	12
	11:00PM	- 7	- 3		- 2	- 3	10
	11:30PM	- 8	- 4		- 3	- 4	7
1/23	12Midnight	- 8	- 5		- 4	- 4	5
	12:30AM	- 9	- 5		- 4	- 5	4
	1:00AM	- 9	- 6		- 5	- 5	2
	1:30AM	- 8	- 6		- 5	- 6	1
	2:00AM	- 9	- 7		- 5	- 6	1
	2:30AM	- 9	- 7		- 6	- 6	0
	3:00AM	-10	- 7		- 6	- 7	0
	3:30AM	- 9	- 7		- 6	- 7	- 1
	4:00AM	- 9	- 7		- 6	- 7	- 2
	4:30AM	-10	- 8		- 7	- 7	- 2
	5:00AM	-10	- 8		- 7	- 7	- 3
	5:30AM	-10	- 8		- 7	- 7	- 3
	6:00AM	- 9	- 8		- 7	- 8	- 4
	6:30AM	- 8	- 8		- 7	- 8	- 4
	7:00AM	- 9	- 8		- 7	- 8	- 5
	7:30AM	- 9	- 8		- 7	- 8	- 5
	8:00AM	- 8	- 8		- 7	- 8	

TABLE B-VIII

AMBIENT AND TANK FUEL TEMPERATURES DURING OVERNIGHT SOAK: 1/23-24/81FUEL 102

<u>Date</u>	<u>Time</u>	Temperatures, °C						
		<u>Ambient</u>	<u>C-121</u>	<u>C-122</u>	<u>C-123</u>	<u>C-124</u>	<u>C-125</u>	<u>C-126</u>
1/23	6:00PM	- 5	1	3	11	5	0	
	6:30PM	- 6	0	2	8	3	- 1	
	7:00PM	- 6	0	0	5	1	- 1	
	7:30PM	- 7	- 1	0	3	0	- 2	
	8:00PM	- 7	- 2	- 1	1	- 1	- 2	
	8:30PM	- 7	- 3	- 2	0	- 2	- 3	
	9:00PM	- 8	- 3	- 2	- 1	- 3	- 3	
	9:30PM	- 8	- 4	- 3	- 2	- 3	- 3	
	10:00PM	- 8	- 4	- 3	- 3	- 4	- 4	
	10:30PM	- 8	- 5	- 4	- 3	- 5	- 4	
	11:00PM	- 8	- 5	- 4	- 4	- 5	- 4	
	11:30PM	- 8	- 5	- 5	- 5	- 6	- 5	
1/24	12Midnight	- 9	- 6	- 5	- 5	- 6	- 5	
	12:30AM	- 9	- 6	- 6	- 6	- 7	- 5	
	1:00AM	-10	- 7	- 6	- 6	- 7	- 6	
	1:30AM	-10	- 7	- 7	- 7	- 7	- 6	
	2:00AM	-10	- 7	- 7	- 7	- 8	- 6	
	2:30AM	-11	- 8	- 7	- 7	- 8	- 7	
	3:00AM	-11	- 8	- 8	- 8	- 8	- 7	
	3:30AM	-11	- 8	- 8	- 8	- 9	- 7	
	4:00AM	-12	- 8	- 8	- 8	- 9	- 8	
	4:30AM	-13	- 9	- 9	- 9	- 9	- 8	
	5:00AM	-14	- 9	- 9	- 9	-10	- 8	
	5:30AM	-14	-10	- 9	-10	-10	- 9	
	6:00AM	-14	-10	-10	-10	-10	- 9	
	6:30AM	-13	-10	-10	-10	-10	- 9	
	7:00AM	-13	-10	-10	-10	-11	-10	
	7:30AM	-14	-10	-10	-10	-11	-10	

TABLE B-VII

AMBIENT AND TANK FUEL TEMPERATURES DURING OVERNIGHT SOAK: 1/22-23/81FUEL 105

<u>Date</u>	<u>Time</u>	Temperatures, °C						
		Ambient	C-121	C-122	C-123	C-124	C-125	C-126
1/22	7:30PM	- 5	4		2	2	20	
	8:00PM	- 6	2		1	1	21	
	8:30PM	- 6	1		0	0	20	
	9:00PM	- 6	0		0	0	19	
	9:30PM	- 7	- 1		- 1	- 1	16	
	10:00PM	- 7	- 2		- 1	- 2	14	
	10:30PM	- 8	- 3		- 2	- 3	12	
	11:00PM	- 7	- 3		- 2	- 3	10	
	11:30PM	- 8	- 4		- 3	- 4	7	
1/23	12Midnight	- 8	- 5		- 4	- 4	5	
	12:30AM	- 9	- 5		- 4	- 5	4	
	1:00AM	- 9	- 6		- 5	- 5	2	
	1:30AM	- 8	- 6		- 5	- 6	1	
	2:00AM	- 9	- 7		- 5	- 6	1	
	2:30AM	- 9	- 7		- 6	- 6	0	
	3:00AM	-10	- 7		- 6	- 7	0	
	3:30AM	- 9	- 7		- 6	- 7	- 1	
	4:00AM	- 9	- 7		- 6	- 7	- 2	
	4:30AM	-10	- 8		- 7	- 7	- 2	
	5:00AM	-10	- 8		- 7	- 7	- 3	
	5:30AM	-10	- 8		- 7	- 7	- 3	
	6:00AM	- 9	- 8		- 7	- 8	- 4	
	6:30AM	- 8	- 8		- 7	- 8	- 4	
	7:00AM	- 9	- 8		- 7	- 8	- 5	
	7:30AM	- 9	- 8		- 7	- 8	- 5	
	8:00AM	- 8	- 8		- 7	- 8		

TABLE B-IX

AMBIENT AND TANK FUEL TEMPERATURES DURING OVERNIGHT SOAK: 1/25-26/81

FUEL 105

<u>Date</u>	<u>Time</u>	Temperatures, °C						
		<u>Ambient</u>	<u>C-121</u>	<u>C-122</u>	<u>C-123</u>	<u>C-124</u>	<u>C-125</u>	<u>C-126</u>
1/25	10:00AM	- 4	8	8	8			4
	10:30AM	- 2	6	8	8			3
	11:00AM	- 2	5	6	6			
	11:30AM	- 1	4	5	5			
	12 Noon	- 1	3	5	4			
	12:30PM	0	3	4	4			
	1:00PM	0	3	4	3			6
	1:30PM	0	2	4	3			5
	2:00PM	1	2	3	3			5
	2:30PM	1	2	3	2			5
	3:00PM	2	2	3	2			5
	3:30PM	2	2	3	2			
	4:00PM	0	2	3	2			4
	4:30PM	0	2	3	2			3
	5:00PM	- 1	1	2	1			2
	5:30PM	- 3	1	2	1			1
	6:00PM	- 4	0	1	0			0
	6:30PM	- 4	0	1	0			0
	7:00PM	- 5	0	0	0			- 1
	7:30PM	- 7	- 1	0	0			- 2
	8:00PM	- 5	- 1	0	- 1			- 2
	8:30PM	- 4	- 2	- 1	- 1			- 2
	9:00PM	- 2	- 2	- 1	- 2			- 2
	9:30PM	- 1	- 2	- 1	- 2			- 1
	10:00PM	- 1	- 2	- 1	- 2			- 1
	10:30PM	- 1	- 2	- 1	- 2			- 1
	11:00PM	- 2	- 2	- 1	- 2			- 1
	11:30PM	- 1	- 2	- 1	- 2			- 1
1/26	12Midnight	- 2	- 2	- 1	- 2			- 2
	12:30AM	- 3	- 2	- 1	- 2			- 2
	1:00AM	- 3	- 2	- 2	- 2			- 2
	1:30AM	- 3	- 2	- 2	- 2			- 3
	2:00AM	- 5	- 2	- 2	- 2			- 3
	2:30AM	- 5	- 3	- 3	- 3			- 3
	3:00AM	- 6	- 3	- 3	- 3			- 4
	3:30AM	- 6	- 4	- 3	- 4			- 5
	4:00AM	- 7	- 4	- 4	- 4			- 5
	4:30AM	- 8	- 5	- 5	- 5			- 6
	5:00AM	- 8	- 5	- 5	- 5			- 6
	5:30AM	- 9	- 6	- 5	- 6			- 7
	6:00AM	-10	- 6	- 6	- 6			- 7
	6:30AM	-10	- 7	- 7	- 7			- 8
	7:00AM	-10	- 7	- 7	- 7			- 8
	7:30AM	-12	- 8	- 8	- 8			- 9
	8:00AM	-12	- 8	- 8	- 8			

TABLE B-X

AMBIENT AND TANK FUEL TEMPERATURES DURING OVERNIGHT SOAK: 1/26-27/81FUEL 104

<u>Date</u>	<u>Time</u>	Temperatures, °C					
		<u>Ambient</u>	<u>C-121</u>	<u>C-122</u>	<u>C-123</u>	<u>C-124</u>	<u>C-125</u>
1/26	6:30PM	-18	-11		-10	-13	- 7
	7:00PM	-18	-13		-11	-15	- 8
	7:30PM	-18	-13		-12	-16	-10
	8:00PM	-20	-14		-13	-16	-11
	8:30PM	-20	-15		-14	-17	-12
	9:00PM	-21	-16		-15	-18	-13
	9:30PM	-20	-16		-16	-18	-14
	10:00PM	-20	-17		-17	-19	-15
	10:30PM	-20	-17		-17	-19	-16
	11:00PM	-21	-18		-18	-19	-17
	11:30PM	-21	-18		-18	-20	-18
1/27	12Midnight	-20	-18		-19	-20	-18
	12:30AM	-21	-18		-19	-20	-18
	1:00AM	-21	-19		-19	-20	-19
	1:30AM	-22	-19		-19	-20	-19
	2:00AM	-21	-19		-19	-20	-19
	2:30AM	-22	-19		-20	-21	-20
	3:00AM	-22	-19		-20	-21	-20
	3:30AM	-22	-19		-20	-21	-20
	4:00AM	-22	-19		-20	-21	-20
	4:30AM	-22	-20		-20	-21	-21
	5:00AM	-23	-20		-20	-21	-21
	5:30AM	-24	-20		-21	-21	-21
	6:00AM	-24	-20		-21	-22	-22
	6:30AM	-25	-20		-21	-22	-22
	7:00AM	-25	-21		-21	-22	-22
	7:30AM	-25	-21		-22	-23	-23
	8:00AM	-26	-21		-22	-23	-23

TABLE B-XI

AMBIENT AND TANK FUEL TEMPERATURES DURING OVERNIGHT SOAK: 1/28-29/81FUEL 104

<u>Date</u>	<u>Time</u>	<u>Ambient</u>	<u>Temperatures, °C</u>					
			<u>C-121</u>	<u>C-122</u>	<u>C-123</u>	<u>C-124</u>	<u>C-125</u>	<u>C-126</u>
1/28	1:30PM		- 6	- 5	- 4	- 6		
	2:00PM	-17	- 6	- 6	- 5	- 7	-10	
	2:30PM	-19	- 8	- 6	- 6	- 8	-11	
	3:00PM	-18	- 9	- 7	- 7	-10	-12	
	3:30PM	-20	-10	- 8	- 8	-11	-13	
	4:00PM	-21	-11	- 9	- 9	-12	-14	
	4:30PM	-22	-12	-10	-10	-13	-15	
	9:30PM	-22	-14	-12	-12	-14	-16	
	10:00PM	-22	-14	-12	-12	-15	-17	
	10:30PM	-21	-15	-13	-13	-15	-17	
	11:00PM	-20	-15	-14	-14	-16	-17	
	11:30PM	-21	-16	-14	-14	-16	-17	
1/29	12Midnight	-21	-16	-15	-15	-16	-18	
	12:30AM	-22	-17	-15	-15	-17	-18	
	1:00AM	-20	-17	-16	-16	-17	-19	
	1:30AM	-23	-18	-16	-16	-18	-19	
	2:00AM	-23	-18	-17	-17	-18	-19	
	2:30AM	-22	-18	-17	-17	-18	-20	
	3:00AM	-20	-19	-18	-18	-19	-20	
	3:30AM	-19	-19	-18	-18	-19	-19	
	4:00AM	-19	-19	-18	-18	-19	-19	
	4:30AM	-19	-19	-18	-18	-19	-19	
	5:00AM	-19	-19	-18	-18	-19	-19	
	5:30AM	-19	-19	-18	-18	-19	-19	
	6:00AM	-19	-19	-18	-18	-19	-19	
	6:30AM	-19	-19	-18	-18	-19	-19	
	7:00AM	-19	-19	-18	-18	-19	-19	
	7:30AM	-19	-19	-18	-18	-19	-19	
	8:00AM	-19	-19	-18	-18	-19	-19	
	8:30AM	-18		-18	-18	-19	-18	

TABLE B-XII

AMBIENT AND TANK FUEL TEMPERATURES DURING OVERNIGHT SOAK: 1/29-30/81FUEL 104

<u>Date</u>	<u>Time</u>	Temperatures, °C					
		<u>Ambient</u>	<u>C-121</u>	<u>C-122</u>	<u>C-123</u>	<u>C-124</u>	<u>C-125</u>
1/29	5:30PM	-16	-11	-11	- 8	-10	-10
	6:00PM	-18	-11	-11	- 9	-10	-11
	6:30PM	-19	-12	-12	- 9	-11	-12
	7:00PM	-21	-13	-12	-10	-12	-13
	7:30PM	-21	-14	-13	-11	-13	-15
	8:00PM	-22	-14	-14	-12	-14	-16
	8:30PM	-23	-15	-15	-13	-15	-17
	9:00PM	-23	-16	-15	-14	-16	-18
	9:30PM	-24	-17	-16	-15	-17	-19
	10:00PM	-25	-17	-17	-16	-17	-20
	10:30PM	-25	-18	-17	-16	-18	-20
	11:00PM	-24	-18	-18	-17	-19	-21
	11:30PM	-24	-19	-18	-17	-19	-21
	12Midnight	-25	-19	-19	-18	-19	-22
	12:30AM	-24	-19	-19	-18	-20	-22
	1:00AM	-24	-20	-19	-19	-20	-22
	1:30AM	-24	-20	-20	-19	-20	-22
	2:00AM	-25	-20	-20	-19	-21	-22
	2:30AM	-25	-20	-20	-20	-21	-23
	3:00AM	-25	-20	-20	-20	-21	-23
	3:30AM	-24	-21	-21	-20	-21	-23
	4:00AM	-23	-21	-21	-20	-21	-23
	4:30AM	-23	-21	-21	-20	-22	-23
	5:00AM	-23	-21	-21	-20	-21	-23
	5:30AM	-22	-21	-21	-21	-22	-23
	6:00AM	-22	-21	-21	-21	-22	-23
	6:30AM	-23	-21	-21	-21	-21	-23
	7:00AM	-23	-21	-21	-21	-21	-23
	7:30AM	-24	-21	-21	-21	-21	-23
	8:00AM	-24	-21	-21	-21	-21	-23

TABLE B-XIII

AMBIENT AND TANK FUEL TEMPERATURES DURING OVERNIGHT SOAK: 1/30-31/81FUEL 106

<u>Date</u>	<u>Time</u>	<u>Ambient</u>	Temperatures, °C					
			<u>C-121</u>	<u>C-122</u>	<u>C-123</u>	<u>C-124</u>	<u>C-125</u>	<u>C-126</u>
1/30	6:00PM	-13	-5	-2	-3			
	6:30PM	-13	-6	-4	-4			
	7:00PM	-14	-6	-5	-5			
	7:30PM	-14	-7	-6	-6			
	8:00PM	-16	-8	-6	-6			
	8:30PM	-16	-9	-7	-7			
	9:00PM	-16	-9	-8	-8			
	9:30PM	-16	-10	-8	-8			
	10:00PM	-16	-10	-9	-9			
	10:30PM	-16	-11	-10	-10			
	11:00PM	-16	-11	-10	-10			
	11:30PM	-16	-11	-11	-11			
1/31	12Midnight	-16	-12	-11	-11			
	12:30AM	-18	-12	-12	-12			
	1:00AM	-13	-13	-12	-12			
	1:30AM	-13	-13	-12	-12			
	2:00AM	-15	-13	-13	-13			
	2:30AM	-15	-13	-13	-13			
	3:00AM	-16	-13	-13	-13			
	3:30AM	-16	-14	-13	-13			
	4:00AM	-17	-14	-14	-14			
	4:30AM	-17	-14	-14	-14			
	5:00AM	-18	-14	-14	-14			
	5:30AM	-19	-15	-15	-14			
	6:00AM	-19	-15	-15	-15			
	6:30AM	-19	-15	-15	-15			
	7:00AM	-17	-16	-16	-16			
	7:30AM	-17	-16	-16	-16			
	8:00AM	-16	-16	-16	-16			

TABLE B-XIV

AMBIENT AND TANK FUEL TEMPERATURES DURING OVERNIGHT SOAK: 2/1-2/81

FUEL 106

<u>Date</u>	<u>Time</u>	Temperatures, °C						
		<u>Ambient</u>	<u>C-121</u>	<u>C-122</u>	<u>C-123</u>	<u>C-124</u>	<u>C-125</u>	<u>C-126</u>
2/1	11:00AM	- 8	4	5	4	2		
	11:30AM	- 8	2	4	2	0		
	12 Noon	- 8	1	2	1	- 1		
	12:30PM	- 8	0	1	- 1	- 2		
	1:00PM	- 8	- 1	0	- 2	- 3		
	1:30PM	- 7	- 2	- 1	- 2	- 4		
	2:00PM	- 6	- 2	- 2	- 3	- 4		
	2:30PM	- 7	- 3	- 2	- 3	- 5		
	3:00PM	- 7	- 3	- 2	- 4	- 5		
	3:30PM	- 7	- 3	- 3	- 4	- 5		
	4:00PM	- 7	- 4	- 3	- 4	- 6		
	4:30PM	- 10	- 4	- 4	- 5	- 6		
	5:00PM	- 11	- 6	- 5	- 6	- 7		
	5:30PM	- 14	- 7	- 6	- 6	- 8		
	6:00PM	- 16	- 8	- 8	- 8	- 10		
	6:30PM	- 16	- 10	- 9	- 9	- 11		
	7:00PM	- 17	- 11	- 10	- 10	- 12		
	7:30PM	- 18	- 12	- 11	- 11	- 14		
	8:00PM	- 19	- 13	- 12	- 12	- 14		
	8:30PM	- 19	- 13	- 13	- 13	- 15		
	9:00PM	- 20	- 14	- 14	- 14	- 16		
	9:30PM	- 20	- 15	- 15	- 15	- 17		
	10:00PM	- 20	- 16	- 16	- 16	- 17		
	10:30PM	- 21	- 16	- 16	- 16	- 18		
	11:00PM	- 20	- 17	- 17	- 17	- 18		
	11:30PM	- 20	- 17	- 17	- 17	- 18		
2/2	12Midnight	-20	-17	-18	-17	-19		
	12:30AM	-20	-18	-18	-18	-19		
	1:00AM	-21	-18	-18	-18	-19		
	1:30AM	-21	-18	-18	-18	-19		
	2:00AM	-22	-18	-19	-18	-19		
	2:30AM	-22	-19	-19	-19	-20		
	3:00AM	-23	-19	-19	-19	-20		
	3:30AM	-23	-19	-19	-19	-20		
	4:00AM	-24	-20	-20	-20	-21		
	4:30AM	-24	-20	-20	-20	-21		
	5:00AM	-25	-20	-21	-20	-21		
	5:30AM	-26	-21	-21	-21	-22		
	6:00AM	-26	-21	-22	-21	-22		
	6:30AM	-27	-21	-22	-22	-23		
	7:00AM	-26	-22	-22	-22	-23		
	7:30AM	-27	-22	-23	-22	-23		
	8:00AM	-27	-23	-23	-23	-24		
	8:30AM	-27		-23	-23			

TABLE B-XV

AMBIENT AND TANK FUEL TEMPERATURES DURING OVERNIGHT SOAK: 2/13-14/81FUEL 107

Date	Time	Temperatures, °C					
		Ambient	C-121	C-122	C-123	C-124	C-125
2/13	6:00PM	-11	-5	-6	-5	-2	
	6:30PM	-11	-6	-6	-6	-4	
	7:00PM	-11	-6	-7	-6	-6	
	7:30PM	-11	-7	-7	-7	-6	
	8:00PM	-11	-7	-8	-7	-7	
	8:30PM	-11	-8	-8	-8	-8	
	9:00PM	-11	-8	-8	-8	-8	
	9:30PM	-11	-8	-9	-9	-9	
	10:00PM	-11	-8	-9	-9	-9	
	10:30PM	-11	-9	-9	-9	-9	
	11:00PM	-11	-9	-9	-9	-10	
	11:30PM	-12	-9	-9	-9	-10	
2/14	12Midnight	-11	-9	-9	-10	-10	
	12:30AM	-11	-10	-10	-10	-10	
	1:00AM	-12	-10	-10	-10	-10	
	1:30AM	-12	-10	-10	-10	-10	
	2:00AM	-12	-10	-10	-10	-11	
	2:30AM	-11	-10	-10	-10	-11	
	3:00AM	-11	-10	-10	-10	-11	
	3:30AM	-11	-10	-10	-11	-11	
	4:00AM	-12	-10	-10	-11	-11	
	4:30AM	-12	-11	-11	-11	-11	
	5:00AM	-12	-11	-11	-11	-11	
	5:30AM	-13	-11	-11	-11	-11	
	6:00AM	-13	-11	-11	-11	-12	
	6:30AM	-13	-11	-11	-11	-12	
	7:00AM	-16	-12	-12	-12	-12	
	7:30AM	-17	-12	-12	-12	-13	
	8:00AM	-18	-13	-13	-13	-13	

TABLE B-XVI

AMBIENT AND TANK FUEL TEMPERATURES DURING OVERNIGHT SOAK: 2/25-26/81

FUEL 102

<u>Date</u>	<u>Time</u>	<u>Ambient</u>	Temperatures, °C					
			<u>C-121</u>	<u>C-122</u>	<u>C-123</u>	<u>C-124</u>	<u>C-125</u>	<u>C-126</u>
2/25	4:30PM	- 3	2	2	4	1	0	8
	5:00PM	- 3	1	1	3	0	0	7
	5:30PM	- 4	0	0	2	0	0	6
	6:00PM	- 5	0	0	1	- 1	- 1	4
	6:30PM	- 5	0	0	0	- 1	- 2	3
	7:00PM	- 5	- 1	- 1	0	- 2	- 2	2
	7:30PM	- 5	- 1	- 1	0	- 2	- 2	1
	8:00PM	- 6	- 2	- 2	- 1	- 3	- 3	0
	8:30PM	- 5	- 2	- 2	- 1	- 3	- 3	0
	9:00PM	- 5	- 3	- 3	- 2	- 3	- 3	0
	9:30PM	- 5	- 3	- 3	- 2	- 4	- 3	- 1
	10:00PM	- 6	- 3	- 3	- 3	- 4	- 4	- 1
	10:30PM	- 6	- 3	- 3	- 3	- 4	- 4	- 2
	11:00PM	- 6	- 4	- 4	- 3	- 4	- 4	- 2
	11:30PM	- 6	- 4	- 4	- 3	- 4	- 4	- 1
2/26	12Midnight	- 6	- 4	- 4	- 3	- 5	- 4	- 3
	12:30AM	- 6	- 4	- 4	- 4	- 5	- 4	- 3
	1:00AM	- 6	- 4	- 5	- 4	- 5	- 5	- 4
	1:30AM	- 5	- 4	- 4	- 4	- 5	- 5	- 4
	2:00AM	- 6	- 5	- 5	- 4	- 5	- 5	- 4
	2:30AM	- 6	- 5	- 5	- 4	- 5	- 5	- 4
	3:00AM	- 6	- 5	- 5	- 5	- 5	- 5	- 4
	3:30AM	- 6	- 5	- 5	- 5	- 5	- 5	- 3
	4:00AM	- 6	- 5	- 5	- 5	- 5	- 5	- 3
	4:30AM	- 7	- 5	- 5	- 5	- 5	- 5	- 4
	5:00AM	- 7	- 5	- 5	- 5	- 5	- 5	- 4
	5:30AM	- 6	- 5	- 5	- 5	- 6	- 6	- 5
	6:00AM	- 7	- 5	- 5	- 5	- 6	- 6	- 5
	6:30AM	- 7	- 5	- 5	- 5	- 6	- 6	- 5
	7:00AM	- 7	- 5	- 6	- 5	- 6	- 6	- 4
	7:30AM	- 8	- 6	- 6	- 5	- 6	- 6	- 4

TABLE B-XVII

AMBIENT AND TANK FUEL TEMPERATURES DURING OVERNIGHT SOAK: 2/26-27/81FUEL 102: VEHICLE C-128FUEL 105: VEHICLES C-122, C-124, C-126FUEL 107: VEHICLES C-121, C-123, C-125

Date	Time	Temperatures, °C						
		Ambient	C-121	C-122	C-123*	C-124	C-125	C-128
2/26	4:00PM	- 4	0	2	11	2	0	1
	4:30PM	- 5	0	2	9	1	0	1
	5:00PM	- 4	0	1	7	0	- 1	1
	5:30PM	- 5	- 1	0	4	0	- 2	0
	6:00PM	- 5	- 1	0	1	- 1	- 3	0
	6:30PM	- 7	- 1	0	- 1	- 1	- 3	- 2
	7:00PM	- 8	- 2	- 1	- 3	- 2	- 4	- 3
	7:30PM	- 9	- 2	- 1	- 5	- 3	- 5	- 3
	8:00PM	-10	- 3	- 2	- 6	- 4	- 5	- 4
	8:30PM	-10	- 3	- 2	- 7	- 4	- 6	- 5
	9:00PM	-10	- 4	- 3	- 8	- 5	- 6	0
	9:30PM	-11	- 4	- 4	- 9	- 5	- 7	- 6
	10:00PM	-11	- 5	- 4	-10	- 6	- 8	- 7
	10:30PM	-11	- 5	- 5	-10	- 7	- 8	- 7
	11:00PM	-12	- 5	- 5	-11	- 7	- 8	- 8
	11:30PM	-12	- 6	- 6	-11	- 7	- 9	- 8
1/23	12Midnight	-12	- 6	- 6	-12	- 8	- 9	- 9
	12:30AM	-12	- 7	- 6	-12	- 8	- 9	- 9
	1:00AM	-12	- 7	- 7	-13	- 8	-10	- 9
	1:30AM	-12	- 7	- 7	-13	- 9	-10	- 10
	2:00AM	-12	- 7	- 7	-13	- 9	-10	- 10
	2:30AM	-13	- 8	- 8	-14	- 9	-10	-10
	3:00AM	-11	- 8	- 8	-14	- 9	-10	-10
	3:30AM	-11	- 8	- 8	-13	- 9	-10	-10
	4:00AM	-12	- 8	- 8	-13	- 9	-10	-10
	4:30AM	-12	- 8	- 9	-14	- 9	-10	-11
	5:00AM	-13	- 9	- 9	-14	-10	-11	-11
	5:30AM	-13	- 9	- 9	-14	-10	-11	-11
	6:00AM	-13	- 9	- 9	-14	-10	-11	-11
	6:30AM	-13	- 9	- 9	-15	-10	-11	-11
	7:00AM	-13	- 9	- 9	-15	-10	-11	-11

* Data appear to be incorrect.

TABLE B-XVIII

AMBIENT AND TANK FUEL TEMPERATURES DURING OVERNIGHT SOAK: 3/1-2/81FUEL 102: VEHICLE C-128FUEL 105: VEHICLES C-122, C-124, C-126FUEL 107: VEHICLES C-121, C-123 C-125

<u>Date</u>	<u>Time</u>	Temperatures, °C						
		Ambient	C-121	C-122	C-123	C-124	C-125	C-128
3/1	12 Noon	- 3	6	5	9	5	2	2
	12:30PM	- 2	6	5	8	5	2	2
	1:00PM	- 3	5	4	8		1	2
	1:30PM	0	5	4	7	3	4	1
	2:00PM	- 2	4	4	6	2	3	1
	2:30PM	- 2	4	3	6	2	2	1
	3:00PM	- 2	4	3	5	1	3	1
	3:30PM	- 1	3	3	5	1	2	1
	4:00PM	- 2	3	3	4		2	1
	4:30PM	- 2	2	2	4		1	0
	5:00PM	- 3	2	2	3		0	0
	5:30PM	- 2	2	1	3		0	0
	6:00PM	- 3	1	1	2		0	0
	6:30PM	- 4	1	0	2		- 1	0
	7:00PM	- 4	0	0	1	- 2	- 2	0
	7:30PM	- 4	0	0	0	- 2	- 3	0
	8:00PM	- 5	0	0	0	- 3	- 3	- 1
	8:30PM	- 6	- 1	- 1	0	- 3	- 3	- 1
	9:00PM	- 7	- 2	- 2	- 1	- 4	- 4	- 1
	9:30PM	- 7	- 2	- 2	- 2	- 5	- 5	- 2
	10:00PM	- 8	- 3	- 3	- 2	- 5	- 6	- 2
	10:30PM	- 9	- 4	- 4	- 3	- 6	- 7	- 3
	11:00PM	- 9	- 5	- 4	- 4	- 7	- 7	- 3
	11:30PM	-11	- 5	- 5	- 5	- 7	- 8	- 4
3/2	12Midnight	-11	- 6	- 6	- 5	- 8	- 9	- 4
	12:30AM	-11	- 7	- 7	- 6		-10	- 5
	1:00AM	-13	- 8	- 8	- 7	-10	-11	- 5
	1:30AM	-13	- 8	- 8	- 8		-12	- 6
	2:00AM	-13	- 9	- 9	- 8		-12	- 7
	2:30AM	-14	- 9	- 9	- 9		-13	- 7
	3:00AM	-15	-10	-10	- 9		-13	- 8
	3:30AM	-14	-11	-11	-10		-13	- 8
	4:00AM	-15	-11	-11	-10		-14	- 8
	4:30AM	-15	-11	-11	-11		-14	- 9
	5:00AM	-15	-12	-12	-11		-14	- 9
	5:30AM	-16	-12	-12	-12		-16	- 9
	6:00AM	-16	-12	-12	-12		-16	-10
	6:30AM	-17	-13	-13	-12		-16	-10
	7:00AM	-16	-13	-13	-13	-14 -15	-16	-10

TABLE B-XIX

AMBIENT AND TANK FUEL TEMPERATURES DURING OVERNIGHT SOAK: 3/2-3/81FUEL 101: VEHICLES C-121, C-125, C-126, C-128FUEL 106: VEHICLES C-122 & C-124FUEL 107: VEHICLE C-123

<u>Date</u>	<u>Time</u>	Temperatures, °C							
		<u>Ambient</u>	<u>C-121</u>	<u>C-122</u>	<u>C-123</u>	<u>C-124</u>	<u>C-125</u>	<u>C-126</u>	<u>C-128</u>
3/2	5:30PM	-14	-6	-3	0	-4	-8	-4	8
	6:00PM	-15	-8	-4	-3	-6	-10	-5	6
	6:30PM	-15	-9	-6	-6	-8	-11	-6	3
	7:00PM	-15	-9	-7	-8	-9	-11	-7	1
	7:30PM	-15	-10	-8	-9	-10	-12	-8	0
	8:00PM	-15	-10	-9	-10	-10	-12	-9	-1
	8:30PM	-16	-11	-9	-11	-10	-12	-10	-2
	9:00PM	-16	-11	-10	-12	-11	-13	-10	-4
	9:30PM	-16	-11	-11	-13	-11	-13	-11	-5
	10:00PM	-15	-12	-11	-13	-12	-13	-11	-6
	10:30PM	-15	-12	-11	-13	-12	-13	-12	-6
	11:00PM	-15	-12	-12	-13	-12	-13	-12	-7
	11:30PM	-15	-12	-12	-13	-13	-13	-12	-8
3/3	12Midnight	-15	-13	-12	-14	-13	-14	-13	-9
	12:30AM	-15	-13	-13	-14	-13	-14	-13	-9
	1:00AM	-16	-13	-13	-14	-13	-14	-13	-10
	1:30AM	-15	-14	-13	-14	-14	-14	-14	-10
	2:00AM	-15	-14	-14	-15	-14	-14	-14	-11
	2:30AM	-16	-14	-14	-15	-14	-14	-14	-11
	3:00AM	-16	-14	-14	-15	-14	-14	-14	-12
	3:30AM	-16	-14	-14	-15	-14	-14	-14	-12
	4:00AM	-16	-14	-14	-15	-14	-15	-15	-12
	4:30AM	-17	-14	-14	-16	-14	-15	-15	-12
	5:00AM	-18	-14	-14	-16	-14	-15	-15	-13
	5:30AM	-18	-14	-14	-17	-14	-16	-15	-13
	6:00AM	-18	-15	-15	-17	-14	-16	-16	-13
	6:30AM	-19	-15	-15	-18	-15	-16	-16	-14
	7:00AM	-19	-15	-15	-18	-15	-17	-16	-14
	7:30AM	-19	-15	-15	-19	-15	-17	-16	-14

TABLE B-XX

AMBIENT AND TANK FUEL TEMPERATURES DURING OVERNIGHT SOAK: 3/3-4/81FUEL 101: VEHICLES C-121, C-125, C-126, C-128FUEL 106: VEHICLES C-122 & C-124FUEL 107: VEHICLE C-123

Date	Time	Temperatures, °C						
		Ambient	C-121	C-122	C-123	C-124	C-125	C-126
3/3	5:00PM	- 6	1	7	13	3	2	4
	5:30PM	- 7	0	7	9	1	1	3
	6:00PM	- 8	0	5	5	0	0	2
	6:30PM	-10	- 1	3	1	- 1	0	1
	7:00PM	-12	- 2	2	- 1	- 2	- 1	0
	7:30PM	-14	- 3	0	- 4	- 3	- 2	0
	8:00PM	-16	- 4	- 1	- 6	- 5	- 3	- 2
	8:30PM	-17	- 6	- 2	- 8	- 6	- 5	- 3
	9:00PM	-18	- 7	- 4	-10	- 7	- 6	- 4
	9:30PM	-18	- 8	- 5	-12	- 8	- 7	- 5
	10:00PM	-19	- 9	- 6	-13	- 9	- 8	- 7
	10:30PM	-20	-10	- 8	-14	-10	- 9	- 8
	11:00PM	-20	-11	- 9	-15	-11	-10	- 9
	11:30PM	-19	-11	-10	-16	-12	-11	-10
	12Midnight	-20	-12	-11	-16	-13	-12	-11
	12:30AM	-20	-13	-11	-17	-14	-13	-12
	1:00AM	-19	-13	-12	-17	-14	-13	-12
	1:30AM	-20	-14	-13	-18	-15	-14	-13
	2:00AM	-19	-14	-13	-18	-15	-14	-13
	2:30AM	-20	-15	-14	-18	-15	-15	-14
	3:00AM	-22	-15	-14	-19	-16	-15	-14
	3:30AM	-21	-15	-15	-16	-16	-19	-15
	4:00AM	-21	-16	-15	-19	-16	-16	-15
	4:30AM	-20	-16	-15	-19	-17	-16	-16
	5:00AM	-21	-16	-16	-19	-17	-17	-17
	5:30AM	-21	-17	-16	-20	-17	-17	-16
	6:00AM	-20	-17	-16	-20	-17	-17	-16
	6:30AM	-21	-17	-17	-20	-17	-17	-17
	7:00AM	-21	-17	-17	-20	-17	-17	-18
	7:30AM	-21	-17	-17	-19	-17	-17	-17

TABLE B-XXI

AMBIENT AND TANK FUEL TEMPERATURES DURING OVERNIGHT SOAK: 3/4-5/81

FUEL 102: VEHICLES C-122 & C-125

FUEL 105: VEHICLES C-121, C-123, C-124, C-126, C-128

Date	Time	Temperatures, °C						
		Ambient	C-121	C-122	C-123	C-124	C-125	C-126
3/4	5:00PM	- 3	6	5	6	7	7	8
	5:30PM	- 4	4	4	5	6	8	7
	6:00PM	- 5	1	3	4	3	7	6
	6:30PM	- 6	0	1	3	1	7	5
	7:00PM	- 7	- 1	0	1	0	5	3
	7:30PM	- 7	- 3	0	0	- 1	5	2
	8:00PM	- 7	- 4	- 1	0	- 2	4	1
	8:30PM	- 7	- 5	- 2	- 1	- 3	3	1
	9:00PM	- 8	- 6	- 3	- 2	- 4	3	0
	9:30PM	- 8	- 8	- 4	- 3	- 4	3	0
	10:00PM	- 7	- 7	- 4	- 3	- 5	2	0
	10:30PM	- 8	- 9	- 5	- 4	- 5	2	0
	11:00PM	- 8	- 9	- 5	- 5	- 6	1	0
	11:30PM	- 8	- 9	- 6	- 5	- 6	0	- 1
3/5	12Midnight	- 8	- 10	- 6	- 5	- 7	0	- 1
	12:30AM	- 8	- 10	- 6	- 6	- 7	0	- 1
	1:00AM	- 8	- 9	- 6	- 6	- 7	- 1	- 3
	1:30AM	- 9	- 9	- 7	- 7	- 7	0	- 3
	2:00AM	- 10	- 7	- 7	- 7	- 8	- 7	- 5
	2:30AM	- 11	- 8	- 8	- 7	- 8	- 7	- 9
	3:00AM	- 10	- 8	- 8	- 7	- 8	- 7	- 9
	3:30AM	- 10	- 8	- 8	- 8	- 9	- 8	- 9
	4:00AM	- 10	- 8	- 8	- 8	- 9	- 8	- 9
	4:30AM	- 11	- 8	- 8	- 8	- 9	- 8	- 9
	5:00AM	- 10	- 9	- 9	- 8	- 9	- 8	- 9
	5:30AM	- 11	- 9	- 9	- 9	- 9	- 8	- 10
	6:00AM	- 11	- 9	- 9	- 9	- 9	- 8	- 10
	6:30AM	- 11	- 9	- 9	- 9	- 9	- 8	- 10
	7:00AM	- 11	- 9	- 9	- 9	- 10	- 9	- 10
	7:30AM	- 11	- 9	- 9	- 9	- 10	- 9	- 10

TABLE B-XXII

AMBIENT AND TANK FUEL TEMPERATURES DURING OVERNIGHT SOAK: 3/5-6/81

FUEL 102: VEHICLES C-123 & C-126FUEL 105: VEHICLES C-121 & C-125FUEL 107: VEHICLES C-122, C-124, C-128

Date	Time	Temperatures, °C						
		Ambient	C-121	C-122	C-123	C-124	C-125	C-126
3/5	5:30PM	- 3	2	1	2	6	4	7
	6:00PM	- 4	1	0	1	3	3	4
	6:30PM	- 4	0	0	0	1	2	2
	7:00PM	- 6	0	- 1	0	0	1	1
	7:30PM	- 6	- 1	- 1	- 1	- 1	0	0
	8:00PM	- 7	- 2	- 2	- 2	- 2	0	- 1
	8:30PM	- 8	- 3	- 3	- 3	- 3	- 1	- 2
	9:00PM	- 8	- 3	- 4	- 4	- 4	- 2	- 3
	9:30PM	- 8	- 4	- 4	- 4	- 5	- 2	- 4
	10:00PM	- 9	- 5	- 5	- 5	- 6	- 3	- 5
	10:30PM	- 10	- 5	- 6	- 6	- 6	- 4	- 6
	11:00PM	- 11	- 6	- 6	- 6	- 7	- 5	- 7
	11:30PM	- 12	- 7	- 7	- 7	- 8	- 5	- 7
3/6	12Midnight	-13	- 7	- 8	- 8	- 9	- 6	- 8
	12:30AM	-13	- 8	- 8	- 8	- 9	- 6	- 9
	1:00AM	-14	- 8	- 9	- 8	- 9	- 7	- 9
	1:30AM	-14	- 9	- 9	- 9	-10	- 8	-10
	2:00AM	-13	- 9	- 9	- 9	-10	- 8	-10
	2:30AM	-13	- 9	-10	-10	-11	- 8	-10
	3:00AM	-13	-10	-10	-10	-11	- 9	-11
	3:30AM	-13	-10	-10	-10	-11	- 9	-11
	4:00AM	-13	-10	-11	-10	-11	- 9	-11
	4:30AM	-12	-10	-11	-10	-11	- 9	-11
	5:00AM	-13	-10	-11	-11	-11	-10	-11
	5:30AM	-12	-11	-11	-11	-11	-10	-11
	6:00AM	-13	-11	-11	-11	-11	-10	-11
	6:30AM	-12	-11	-11	-11	-11	-10	-11
	7:00AM	-13	-11	-11	-11	-11	-10	-11
	7:30AM	-13		-11	-11	-12	-10	-11

TABLE B-XXIII

AMBIENT AND TANK FUEL TEMPERATURES DURING OVERNIGHT SOAK: 3/6-7/81

<u>Date</u>	<u>Time</u>	Temperatures, °C						
		<u>Ambient</u>	<u>C-121</u>	<u>C-122</u>	<u>C-123</u>	<u>C-124</u>	<u>C-125</u>	<u>C-126</u>
3/6	5:00PM	- 3	0	7	0	10	0	6
	5:30PM	- 3	0	5	0	7	0	5
	6:00PM	- 3	- 1	4	0	5	0	4
	6:30PM	- 4	- 1	3	- 1	3	0	4
	7:00PM	- 3	- 2	2	- 1	2	- 1	3
	7:30PM	- 4	- 2	1	- 1	1	- 1	2
	8:00PM	- 3	- 2	0	- 2	0	- 1	2
	8:30PM	- 4	- 2	0	- 2	0	- 2	1
	9:00PM	- 4	- 2	0	- 2	- 1	- 2	1
	9:30PM	- 4	- 3	- 1	- 3	- 2	- 2	0
	10:00PM	- 4	- 3	- 1	- 3	- 2	- 3	0
	10:30PM	- 5	- 3	- 1	- 3	- 2	- 3	0
	11:00PM	- 5	- 3	- 2	- 3	- 3	- 3	0
	11:30PM	- 4	- 3	- 2	- 3	- 3	- 3	- 1
3/7	12Midnight	- 5	- 4	- 2	- 4	- 3	- 3	- 1
	12:30AM	- 5	- 4	- 3	- 4	- 4	- 3	- 1
	1:00AM	- 4	- 4	- 3	- 4	- 4	- 4	- 2
	1:30AM	- 5	- 4	- 3	- 4	- 4	- 4	- 2
	2:00AM	- 5	- 4	- 3	- 4	- 4	- 4	- 2
	2:30AM	- 5	- 4	- 4	- 4	- 4	- 4	- 2
	3:00AM	- 5	- 4	- 4	- 4	- 4	- 4	- 3
	3:30AM	- 5	- 4	- 4	- 4	- 4	- 4	- 3
	4:00AM	- 5	- 4	- 4	- 4	- 4	- 4	- 3
	4:30AM	- 4	- 4	- 4	- 4	- 4	- 4	- 3
	5:00AM	- 4	- 4	- 4	- 4	- 4	- 4	- 3
	5:30AM	- 4	- 4	- 4	- 4	- 4	- 4	- 3
	6:00AM	- 4	- 4	- 4	- 5	- 5	- 4	- 3
	6:30AM	- 4	- 4	- 4	- 5	- 4	- 4	- 3
	7:00AM	- 4	- 4	- 4	- 5	- 4	- 4	- 3

TABLE B-XXIV

AMBIENT AND TANK FUEL TEMPERATURES DURING OVERNIGHT SOAK: 3/8-9/81

Date	Time	Ambient	Temperatures, °C						
			C-121	C-122	C-123	C-124	C-125	C-126	C-128
3/8	12 Noon	0	7	8	9	6	4	4	17
	12:30PM	0	6	7	8	5	3	4	14
	1:00PM	0	6	7	7	4	3	4	12
	1:30PM	0	5	6	6	4	3	4	11
	2:00PM	0	5	6	6	3	3	4	10
	2:30PM	1	4	5	5	3	3	3	9
	3:00PM	0	4	5	5	2	3	3	8
	3:30PM	0	4	4	4	2	2	3	7
	4:00PM	0	3	4	4	2	2	3	6
	4:30PM	0	3	4	3	1	2	3	6
	5:00PM	0	3	3	3	1	2	3	5
	5:30PM	0	2	3	3	1	1	2	4
	6:00PM	0	2	3	2	1	1	2	4
	6:30PM	0	2	2	2	0	1	2	4
	7:00PM	0	1	2	2	0	0	2	3
	7:30PM	0	1	1	1	0	0	1	3
	8:00PM	-1	1	1	1	0	0	1	2
	8:30PM	-1	0	1	1	0	0	1	2
	9:00PM	-1	0	1	0	0	0	1	2
	9:30PM	-2	0	0	0	0	0	1	1
	10:00PM	-2	0	0	0	0	0	0	1
	10:30PM	-1	0	0	0	0	0	0	1
	11:00PM	-1	0	0	0	0	0	0	0
	11:30PM	-2	0	0	0	-1	-1	0	0
3/9	12Midnight	-1	0	0	0	-1	-1	0	0
	12:30AM	-2	0	0	0	-1	-1	0	0
	1:00AM	-2	0	0	0	-1	-1	0	0
	1:30AM	-1	-1	0	-1	-1	-1	0	0
	2:00AM	-2	-1	-1	-1	-1	-1	0	0
	2:30AM	-2	-1	-1	-1	-1	-1	0	0
	3:00AM	-2	-1	-1	-1	-2	-2	0	0
	3:30AM	-3	-1	-1	-1	-2	-2	-1	0
	4:00AM	-3	-1	-1	-1	-2	-2	-1	0
	4:30AM	-4	-2	-1	-2	-2	-2	-1	-1
	5:00AM	-3	-2	-2	-2	-2	-3	-1	-1
	5:30AM	-4	-2	-2	-2	-3	-3	-1	-1
	6:00AM	-5	-2	-2	-2	-3	-3	-2	-1
	6:30AM	-4	-3	-2	-3	-3	-3	-2	-1
	7:00AM	-5	-3	-3	-3	-3	-3	-2	-2

TABLE B-XXV

AMBIENT AND TANK FUEL TEMPERATURES DURING OVERNIGHT SOAK: 3/9-10/81

<u>Date</u>	<u>Time</u>	Temperatures, °C						
		<u>Ambient</u>	<u>C-121</u>	<u>C-122</u>	<u>C-123</u>	<u>C-124</u>	<u>C-125</u>	<u>C-126</u>
3/9	4:30PM	- 2						2
	5:00PM	- 3						2
	5:30PM	- 3						1
	6:00PM	- 3						0
	6:30PM	- 4						0
	7:00PM	- 4						0
	7:30PM	- 4						0
	8:00PM	- 4						- 1
	8:30PM	- 4						- 1
	9:00PM	- 5						- 2
	9:30PM	- 5						- 2
	10:00PM	- 4						- 2
	10:30PM	- 5						- 2
	11:00PM	- 5						- 3
	11:30PM	- 5						- 3
3/10	12Midnight	- 5						- 3
	12:30AM	- 5						- 3
	1:00AM	- 5						- 3
	1:30AM	- 5						- 4
	2:00AM	- 6						- 4
	2:30AM	- 6						- 4
	3:00AM	- 6						- 4
	3:30AM	- 6						- 4
	4:00AM	- 6						- 5
	4:30AM	- 6						- 5
	5:00AM	- 6						- 5
	5:30AM	- 7						- 5
	6:00AM	- 6						- 5
	6:30AM	- 7						- 5
	7:00AM	- 7						- 5

TABLE B-XXVI

AMBIENT AND TANK FUEL TEMPERATURES DURING OVERNIGHT SOAK: 3/10-11/81

<u>Date</u>	<u>Time</u>	<u>Temperatures, °C</u>						
		<u>Ambient</u>	<u>C-121</u>	<u>C-122</u>	<u>C-123</u>	<u>C-124</u>	<u>C-125</u>	<u>C-126</u>
3/10	2:30PM	- 2	2					16
	3:00PM	- 2	2					14
	3:30PM	- 2	1					12
	4:00PM	- 2	1					10
	4:30PM	- 2	1					9
	5:00PM	- 3	0					8
	5:30PM	- 3	0					6
	6:00PM	- 2	0					5
	6:30PM	- 3	0					4
	7:00PM	- 3	0					4
	7:30PM	- 4	0					3
	8:00PM	- 4	- 1					2
	8:30PM	- 4	- 1					2
	9:00PM	- 4	- 1					1
	9:30PM	- 5	- 2					0
	10:00PM	- 5	- 2					0
	10:30PM	- 5	- 2					0
	11:00PM	- 5	- 2					0
	11:30PM	- 5	- 3					0
3/11	12Midnight	- 5	- 3					- 1
	12:30AM	- 6	- 3					- 1
	1:00AM	- 5	- 3					- 1
	1:30AM	- 5	- 3					- 2
	2:00AM	- 6	- 4					- 2
	2:30AM	- 6	- 4					- 2
	3:00AM	- 6	- 4					- 3
	3:30AM	- 6	- 4					- 3
	4:00AM	- 7	- 4					- 3
	4:30AM	- 6	- 4					- 3
	5:00AM	- 6	- 4					- 3
	5:30AM	- 7	- 5					- 4
	6:00AM	- 7	- 5					- 4
	6:30AM	- 6	- 5					- 4
	7:00AM	- 6	- 5					- 4

TABLE B-XXVII

AMBIENT AND TANK FUEL TEMPERATURES DURING OVERNIGHT SOAK: 3/11-12/81FUEL 102

<u>Date</u>	<u>Time</u>	Temperatures, °C						
		<u>Ambient</u>	<u>C-121</u>	<u>C-122</u>	<u>C-123</u>	<u>C-124</u>	<u>C-125</u>	<u>C-126</u>
3/11	2:00PM	- 1						4
	2:30PM	- 1						3
	3:00PM	- 1						3
	3:30PM	- 2						2
	4:00PM	- 1						2
	4:30PM	- 1						1
	5:00PM	- 1						1
	5:30PM	- 2						1
	6:00PM	- 2						0
	6:30PM	- 3						0
	7:00PM	- 4					- 1	
	7:30PM	- 5					- 1	
	8:00PM	- 6					- 2	
	8:30PM	- 5					- 2	
	9:00PM	- 5					- 2	
	9:30PM	- 5					- 3	
	10:00PM	- 4					- 3	
	10:30PM	- 4					- 3	
	11:00PM	- 4					- 3	
	11:30PM	- 4					- 3	
3/12	12Midnight	- 3						- 3
	12:30AM	- 4						- 3
	1:00AM	- 3						- 3
	1:30AM	- 4						- 3
	2:00AM	- 4						- 3
	2:30AM	- 3						- 3
	3:00AM	- 4						- 3
	3:30AM	- 4						- 3
	4:00AM	- 3						- 3
	4:30AM	- 3						- 3
	5:00AM	- 3						- 3
	5:30AM	- 3						- 3
	6:00AM	- 3						- 3
	6:30AM	- 3						- 3
	7:00AM	- 3						- 3

TABLE B-XXVIII

AMBIENT AND TANK FUEL TEMPERATURES DURING OVERNIGHT SOAK: 3/12-13/81FUEL 102: VEHICLES C-122 & C-125FUEL 105: VEHICLES C-123 & C-128

<u>Date</u>	<u>Time</u>	Temperatures, °C						
		Ambient	C-121	C-122	C-123	C-124	C-125	C-128
3/12	3:30PM	1	8	8	3		5	9
	4:00PM	1	7	7	3		4	8
	4:30PM	1	6	6	3		4	7
	5:00PM	2	6	6	3		4	7
	5:30PM	0	5	5	2		3	6
	6:00PM	0	5	5	1		2	6
	6:30PM	- 1	4	4	0		1	5
	7:00PM	- 2	2	3	- 1		0	4
	7:30PM	- 3	1	2	- 2		0	3
	8:00PM	- 4	0	1	- 3		- 1	3
	8:30PM	- 5	0	0	- 4		- 1	2
	9:00PM	- 6	- 1	0	- 5		- 2	1
	9:30PM	- 7	- 2	- 1	- 5		- 3	0
	10:00PM	- 6	- 2	- 2	- 6		- 4	0
	10:30PM	- 8	- 3	- 3	- 6		- 5	0
	11:00PM	- 8	- 4	- 3	- 7		- 5	- 1
	11:30PM	- 8	- 4	- 4	- 8		- 6	- 2
3/13	12Midnight	- 9	- 5	- 5	- 8		- 6	- 2
	12:30AM	- 9	- 5	- 5	- 8		- 7	- 3
	1:00AM	- 10	- 6	- 6	- 8		- 7	- 3
	1:30AM	- 10	- 6	- 6	- 9		- 8	- 4
	2:00AM	- 10	- 7	- 7	- 9		- 8	- 4
	2:30AM	- 11	- 7	- 7	- 10		- 8	- 5
	3:00AM	- 11	- 8	- 8	- 11		- 9	- 5
	3:30AM	- 12	- 8	- 8	- 11		- 10	- 6
	4:00AM	- 13	- 9	- 9	- 12		- 10	- 6
	4:30AM	- 14	- 9	- 9	- 12		- 11	- 7
	5:00AM	- 13	- 10	- 10	- 12		- 11	- 7
	5:30AM	- 14	- 10	- 10	- 13		- 11	- 8
	6:00AM	- 15	- 11	- 10	- 13		- 12	- 8
	6:30AM	- 16	- 11	- 11	- 14		- 12	- 9
	7:00AM	- 16	- 12	- 11	- 15		- 13	- 9

TABLE B-XXIX

AMBIENT AND TANK FUEL TEMPERATURES DURING OVERNIGHT SOAK: 3/13-14/81FUEL 102: VEHICLE C-128FUEL 105: VEHICLE C-125

<u>Date</u>	<u>Time</u>	Temperatures, °C						
		<u>Ambient</u>	<u>C-121</u>	<u>C-122</u>	<u>C-123</u>	<u>C-124</u>	<u>C-125</u>	<u>C-126</u>
3/13	5:30PM	- 9	2	4		0		13
	6:00PM	-10	1	2		- 2		10
	6:30PM	-10	0	0		- 4		7
	7:00PM	-10	- 1	- 1		- 5		5
	7:30PM	-12	- 2	- 2		- 6		3
	8:00PM	-15	- 3	- 3		- 7		1
	8:30PM	-16	- 4	- 4		- 9		0
	9:00PM	-17	- 5	- 5		-10		- 1
	9:30PM	-18	- 6	- 6		-11		- 3
	10:00PM	-19	- 7	- 7		-12		- 4
	10:30PM	-20	- 8	- 8		-13		- 6
	11:00PM	-20	- 9	- 9		-14		- 7
	11:30PM	-20	-10	-10		-15		- 8
3/14	12Midnight	-20	-11	-11		-15		- 9
	12:30AM	-21	-12	-12		-16		-10
	1:00AM	-22	-12	-12		-17		-10
	1:30AM	-23	-13	-13		-18		-11
	2:00AM	-22	-14	-14		-18		-11
	2:30AM	-22	-14	-14		-19		-12
	3:00AM	-22	-15	-15		-19		-12
	3:30AM	-21	-15	-15		-19		-13
	4:00AM	-21	-16	-15		-19		-13
	4:30AM	-23	-16	-15		-19		-13
	5:00AM	-24	-17	-16		-20		-14
	5:30AM	-23	-17	-16		-20		-14
	6:00AM	-24	-17	-17		-20		-14
	6:30AM	-24	-17	-17		-21		-15
	7:00AM	-24	-18	-17		-21		-15
	7:30AM	-24	-18	-17		-21		-15

TABLE B-XXX

AMBIENT AND TANK FUEL TEMPERATURES DURING OVERNIGHT SOAK: 3/14-15/81FUEL 105: VEHICLE C-128

<u>Date</u>	<u>Time</u>	<u>Ambient</u>	<u>Temperatures, °C</u>					
			<u>C-121</u>	<u>C-122</u>	<u>C-123</u>	<u>C-124</u>	<u>C-125</u>	<u>C-126</u>
3/14	4:30PM	- 6				0	1	9
	5:00PM	- 5				- 1	0	7
	5:30PM	- 6				- 1	0	5
	6:00PM	- 6				- 2	0	4
	6:30PM	- 6				- 2	- 1	2
	7:00PM	- 7				- 2	- 2	1
	7:30PM	- 7				- 3	- 2	0
	8:00PM	- 7				- 3	- 3	0
	8:30PM	- 7				- 3	- 3	- 1
	9:00PM	- 7				- 4	- 4	- 2
	9:30PM	- 7				- 4	- 4	- 2
	10:00PM	- 7				- 4	- 4	- 3
	10:30PM	- 8				- 5	- 5	- 3
	11:00PM	- 7				- 5	- 5	- 4
	11:30PM	- 7				- 5	- 5	- 4
3/15	12Midnight	- 8				- 5	- 5	- 4
	12:30AM	- 7				- 6	- 6	- 5
	1:00AM	- 8				- 6	- 6	- 5
	1:30AM	- 8				- 6	- 6	- 5
	2:00AM	- 9				- 6	- 6	- 6
	2:30AM	-10				- 6	- 7	- 6
	3:00AM	-10				- 7	- 7	- 6
	3:30AM	-11				- 7	- 8	- 7
	4:00AM	-12				- 7	- 9	- 7
	4:30AM	-13				- 8	- 9	- 7
	5:00AM	-13				- 8	-10	- 8
	5:30AM	-14				- 9	-11	- 8
	6:00AM	-14				- 9	-11	- 9
	6:30AM	-14				- 9	-11	- 9
	7:00AM	-15				-10	-12	-10
	7:30AM	-16				-10	-12	-10

TABLE B-XXXI

AMBIENT AND TANK FUEL TEMPERATURES DURING OVERNIGHT SOAK: 3/15-16/81FUEL 101: VEHICLE C-121FUEL 105: VEHICLE C-123FUEL 106: VEHICLE C-122

<u>Date</u>	<u>Time</u>	<u>Temperatures, °C</u>							
		<u>Ambient</u>	<u>C-121</u>	<u>C-122</u>	<u>C-123</u>	<u>C-124</u>	<u>C-125</u>	<u>C-126</u>	
3/15	12 Noon	-14	-8	-9	7		-6	-3	8
	12:30PM	-14	-9	-10	6		-6	-4	5
	1:00PM	-13	-10	-10	11		-6	-5	2
	1:30PM	-12	-10	-10	14		-6	-5	0
	2:00PM	-13	-10	-10	16		-6	-6	-1
	2:30PM	-12	-10	-10	15		-6	-5	-2
	3:00PM	-11	-10	-10	13		-7	-5	-3
	3:30PM	-12	-10	-11	12		-7	-5	-4
	4:00PM	-13	-11	-11	13		-8	-5	-4
	4:30PM	-12	-11	-11	10		-8	-6	-5
	5:00PM	-13	-11	-11	7		-9	-8	-6
	5:30PM	-13	-11	-11	2		-9	-9	-7
	6:00PM	-14	-11	-11	-2		-10	-10	-8
	6:30PM	-15	-12	-12	-6		-10	-11	-8
	7:00PM	-15	-12	-12	-9		-11	-12	-9
	7:30PM	-16	-13	-13	-11		-12	-13	-10
	8:00PM	-17					-13	-14	-10
	8:30PM	-18	-14	-14	-15		-13	-14	-11
	9:00PM	-19	-14	-14	-16		-14	-15	-11
	9:30PM	-19	-15	-15	-17		-14	-15	-12
	10:00PM	-20	-15	-15	-19		-15	-16	-12
	10:30PM	-23	-16	-16	-20		-15	-17	-13
	11:00PM	-23	-16	-16	-21		-16	-18	-14
	11:30PM	-23	-17	-17	-22		-16	-18	-14
3/16	12Midnight	-23	-18	-17	-22		-17	-19	-15
	12:30AM	-25	-18	-18	-23		-17	-19	-16
	1:00AM	-24	-18	-18	-24		-18	-20	-16
	1:30AM	-25	-19	-19	-24		-18	-20	-17
	2:00AM	-27	-19	-19	-25		-19	-22	-17
	2:30AM	-27	-20	-19	-25		-19	-22	-18
	3:00AM	-26	-20	-20	-26		-20	-23	-19
	3:30AM	-28	-21	-20	-26		-20	-23	-19
	4:00AM	-26	-21	-21	-27		-21	-24	-20
	4:30AM	-27	-22	-21	-27		-21	-24	-20
	5:00AM	-24	-22	-22	-27		-21	-24	-21
	5:30AM	-24	-22	-22	-27		-21	-23	-21
	6:00AM	-24	-23	-22	-26		-21	-23	-21
	6:30AM	-22	-23	-22	-26		-21	-23	-21
	7:00AM	-20	-23	-22	-25		-21	-22	-21

TABLE B-XXXII

AMBIENT AND TANK FUEL TEMPERATURES DURING OVERNIGHT SOAK: 3/16-17/81FUEL 102: VEHICLE C-122FUEL 105: VEHICLE C-123

<u>Date</u>	<u>Time</u>	<u>Ambient</u>	Temperatures, °C					
			<u>C-121</u>	<u>C-122</u>	<u>C-123</u>	<u>C-124</u>	<u>C-125</u>	<u>C-126</u>
3/16	5:00PM	- 9		- 1	0		- 2	0
	5:30PM	-10		- 2	- 1		- 3	- 2
	6:00PM	- 9		- 3	- 2		- 4	- 4
	6:30PM	-10		- 4	- 3		- 5	- 5
	7:00PM	-12		- 5	- 5		- 6	- 6
	7:30PM	-12		- 6	- 6		- 7	- 8
	8:00PM	-14		- 7	- 7		- 8	- 9
	8:30PM	-15		- 8	- 8		- 9	-10
	9:00PM	-17		- 9	- 9		-11	-12
	9:30PM	-18		-11	-10		-12	-13
	10:00PM	-19		-11	-11		-13	-14
	10:30PM	-19		-12	-12		-14	-15
	11:00PM	-21		-13	-13		-15	-15
	11:30PM	-21		-13	-14		-15	-16
3/17	12Midnight	-22		-13	-15		-10	-17
	12:30AM	-22		-13	-15		-11	-17
	1:00AM	-22		-14	-16		-11	-18
	1:30AM	-22		-14	-17		-12	-18
	2:00AM	-23		-14	-17		-12	-19
	2:30AM	-24		-15	-18		-13	-19
	3:00AM	-24		-15	-18		-13	-20
	3:30AM	-25		-16	-19		-14	-20
	4:00AM	-25		-16	-20		-14	-21
	4:30AM	-26		-16	-20		-14	-21
	5:00AM	-26		-17	-20		-15	-22
	5:30AM	-26		-17	-21		-15	-22
	6:00AM	-27		-17	-21		-16	-23
	6:30AM	-28		-18	-22		-16	-23
	7:00AM	-28		-18	-22		-16	-23

TABLE B-XXXIII

AMBIENT AND TANK FUEL TEMPERATURES DURING OVERNIGHT SOAK: 3/17-18/81

FUEL 102: VEHICLE C-122FUEL 105: VEHICLES C-121, C-125, C-128

<u>Date</u>	<u>Time</u>	Temperatures, °C						
		Ambient	C-121	C-122	C-123	C-124	C-125	C-128
3/17	4:30PM	-11	1	0	4		-1	4
	5:00PM	-10	1	-1	4		-2	2
	5:30PM	-10	0	-2	2		-3	0
	6:00PM	-10	0	-3	0		-4	0
	6:30PM	-12	-1	-3	-2		-4	-1
	7:00PM	-13	-2	-4	-4		-5	-3
	7:30PM	-14	-3	-5	-7		-6	-4
	8:00PM	-15	-4	-6	-8		-7	-5
	8:30PM	-13	-5	-7	-9		-7	-5
	9:00PM	-13	-5	-7	-9		-8	-6
	9:30PM	-13	-6	-8	-10		-8	-7
	10:00PM	-14	-7	-8	-11		-9	-7
	10:30PM	-14	-8	-9	-12		-9	-8
	11:00PM	-14	-8	-9	-12		-10	-9
	11:30PM	-14	-9	-10	-12		-10	-9
3/18	12Midnight	-15	-9	-10	-13		-10	-9
	12:30AM	-15	-10	-10	-13		-11	-10
	1:00AM	-15	-10	-10	-13		-11	-10
	1:30AM	-15	-11	-10	-13		-11	-10
	2:00AM	-14	-11	-10	-14		-11	-11
	2:30AM	-15	-11	-10	-14		-12	-11
	3:00AM	-16	-12	-11	-14		-12	-11
	3:30AM	-16	-12	-11	-15		-12	-12
	4:00AM	-16	-12	-11	-15		-12	-12
	4:30AM	-16	-13	-11	-15		-13	-12
	5:00AM	-16	-13	-11	-15		-13	-12
	5:30AM	-16	-13	-12	-15		-13	-12
	6:00AM	-16	-13	-12	-15		-13	-13
	6:30AM	-15	-14	-12	-15		-13	-13
	7:00AM	-15	-14	-12	-15		-13	-13
	7:30AM	-15	-14	-12	-14		-14	-13

TABLE B-XXXIV

AMBIENT AND TANK FUEL TEMPERATURES DURING OVERNIGHT SOAK: 3/18-19/81

<u>Date</u>	<u>Time</u>	<u>Ambient</u>	Temperatures, °C					
			C-121	C-122	C-123	C-124	C-125	C-126
3/18	5:30PM	- 9	4	3	- 3		4	6
	6:00PM	- 9	2	1	- 4		3	4
	6:30PM	- 9	1	0	- 5		2	2
	7:00PM	- 9	0	- 1	- 5		0	1
	7:30PM	- 9	- 1	- 2	- 6		0	0
	8:00PM	- 9	- 2	- 3	- 6		- 1	- 1
	8:30PM	-10	- 3	- 4	- 7		- 2	- 2
	9:00PM	- 9	- 4	- 5	- 7		- 2	- 3
	9:30PM	-10	- 5	- 5	- 7		- 3	- 3
	10:00PM	-10	- 5	- 6	- 8		- 4	- 4
	10:30PM	-10	- 6	- 7	- 8		- 4	- 5
	11:00PM	-10	- 6	- 7	- 8		- 5	- 5
	11:30PM	-10	- 7	- 7	- 8		- 5	- 6
3/19	12Midnight	-10	- 7	- 8	- 9		- 6	- 6
	12:30AM	-10	- 8	- 8	- 9		- 6	- 7
	1:00AM	-10	- 8	- 8	- 9		- 7	- 7
	1:30AM	-10	- 8	- 8	- 9		- 7	- 7
	2:00AM	-10	- 8	- 9	- 9		- 7	- 7
	2:30AM	- 9	- 8	- 9	- 9		- 8	- 8
	3:00AM	-10	- 9	- 9	- 9		- 8	- 8
	3:30AM	-10	- 9	- 9	- 9		- 8	- 8
	4:00AM	-10	- 9	- 9	- 9		- 8	- 8
	4:30AM	- 9	- 9	- 9	- 9		- 8	- 8
	5:00AM	-10	- 9	- 9	- 9		- 8	- 8
	5:30AM	- 9	- 9	- 9	- 9		- 8	- 8
	6:00AM	-10	- 9	- 9	- 9		- 8	- 8
	6:30AM	- 9	- 9	- 9	- 9		- 9	- 8
	7:00AM	-10	- 9	- 9	- 9		- 9	- 8

TABLE B-XXXV

AMBIENT AND TANK FUEL TEMPERATURES DURING OVERNIGHT SOAK: 3/20-21/81

<u>Date</u>	<u>Time</u>	Temperatures, °C						
		<u>Ambient</u>	<u>C-121</u>	<u>C-122</u>	<u>C-123</u>	<u>C-124</u>	<u>C-125</u>	<u>C-126</u>
3/20	5:30PM	5						11
	6:00PM	4						10
	6:30PM	3						9
	7:00PM	2						8
	7:30PM	1						7
	8:00PM	1						6
	8:30PM	1						6
	9:00PM	1						5
	9:30PM	0						4
	10:00PM	- 1						4
	10:30PM	- 2						3
	11:00PM	- 2						3
	11:30PM	- 2						2
3/21	12Midnight	- 2						2
	12:30AM	- 1						1
	1:00AM	- 2						1
	1:30AM	- 3						1
	2:00AM	- 3						0
	2:30AM	- 4						0
	3:00AM	- 5						0
	3:30AM	- 6						0
	4:00AM	- 7						- 1
	4:30AM	- 9						- 1
	5:00AM	- 8						- 2
	5:30AM	- 9						- 3
	6:00AM	- 9						- 3
	6:30AM	- 8						- 3
	7:00AM	- 7						- 4

TABLE B-XXXVI

AMBIENT AND TANK FUEL TEMPERATURES DURING OVERNIGHT SOAK: 3/22-23/81

Date	Time	Temperatures, °C						
		Ambient	C-121	C-122	C-123	C-124	C-125	C-126
3/22	12 NOON	5	13	13	12	6	10	14
	12:30PM	5	13	12	12	6	9	12
	1:00PM	6	12	11	11	6	9	11
	1:30PM	6	12	11	10	6	10	10
	2:00PM	7	12	11	10	6	10	10
	2:30PM	7	11	10	9	6	9	9
	3:00PM	4	10	10	9	6	8	8
	3:30PM	2	10	9	8	6	7	7
	4:00PM	3	9	8	8	5	7	6
	4:30PM	4	8	8	7	5	7	5
	5:00PM	3	8	7	6	4	6	5
	5:30PM	3	7	7	6	4	6	5
	6:00PM	2	7	6	6	4	5	4
	6:30PM	2	6	6	5	4	5	4
	7:00PM	1	6	5	5	3	5	3
	7:30PM	1	5	5	4	3	4	3
	8:00PM	0	5	4	4	3	4	2
	8:30PM	0	4	4	4	2	3	2
	9:00PM	0	4	4	3	2	3	2
	9:30PM	1	3	3	3	2	3	1
	10:00PM	0	3	3	3	1	2	1
	10:30PM	0	3	2	2	1	2	1
	11:00PM	0	2	2	2	1	2	1
	11:30PM	0	2	2	2	1	2	1
3/23	12Midnight	0	2	2	2	1	1	0
	12:30AM	0	2	2	1	0	1	0
	1:00AM	0	1	1	1	0	1	0
	1:30AM	0	1	1	1	0	1	0
	2:00AM	0	1	1	1	0	1	0
	2:30AM	0	1	1	1	0	1	0
	3:00AM	0	1	1	1	0	1	0
	3:30AM	0	1	1	0	0	0	0
	4:00AM	0	1	1	0	0	0	0
	4:30AM	0	1	0	0	0	0	0
	5:00AM	0	0	0	0	0	0	0
	5:30AM	0	0	0	0	0	0	0
	6:00AM	0	0	0	0	0	0	0
	6:30AM	0	0	0	0	0	0	0
	7:00AM	0	0	0	0	0	0	0

TABLE B-XXXVII

AMBIENT AND TANK FUEL TEMPERATURES DURING OVERNIGHT SOAK: 3/23-24/81

<u>Date</u>	<u>Time</u>	<u>Ambient</u>	Temperatures, °C					
			<u>C-121</u>	<u>C-122</u>	<u>C-123</u>	<u>C-124</u>	<u>C-125</u>	<u>C-126</u>
3/23	4:30PM	5			15		11	
	5:00PM	4			13		10	
	5:30PM	4			12		9	
	6:00PM	3			10		7	
	6:30PM	3			8		7	
	7:00PM	3			7		6	
	7:30PM	1			6		5	
	8:00PM	0			6		4	
	8:30PM	0			5		4	
	9:00PM	0			4		3	
	9:30PM	0			4		3	
	10:00PM	0			3		2	
	10:30PM	- 1			3		2	
	11:00PM	- 2			2		1	
	11:30PM	- 2			2		0	
3/24	12Midnight	- 2			1		0	
	12:30AM	- 1			1		0	
	1:00AM	- 1			1		0	
	1:30AM	- 1			0		0	
	2:00AM	- 1			0		0	
	2:30AM	0			0		0	
	3:00AM	0			0		0	
	3:30AM	- 1			0		0	
	4:00AM	- 2			0		0	
	4:30AM	- 1			0		0	
	5:00AM	- 1			0		0	
	5:30AM	- 1			0		0	
	6:00AM	- 2			0		- 1	
	6:30AM	- 2			0		- 1	
	7:00AM	- 3			0		- 2	

TABLE B-XXXVIII

AMBIENT AND TANK FUEL TEMPERATURES DURING OVERNIGHT SOAK: 3/24-25/81

<u>Date</u>	<u>Time</u>	Temperatures, °C						
		<u>Ambient</u>	<u>C-121</u>	<u>C-122</u>	<u>C-123</u>	<u>C-124</u>	<u>C-125</u>	<u>C-126</u>
3/24	4:00PM	5	7	7	12			9
	4:30PM	5	7	7	11			8
	5:00PM	5	7	7	10			8
	5:30PM	5	7	7	9			7
	6:00PM	5	6	6	9	12		7
	6:30PM	4	6	6	8	11		6
	7:00PM	3	6	6	7	10		6
	7:30PM	0	5	5	7	9		5
	8:00PM	0	5	5	6	8		4
	8:30PM	0	4	4	5	7		4
	9:00PM	-2	4	4	5	6		3
	9:30PM	-2	3	3	4	5		2
	10:00PM	-2	3	3	3	4		2
	10:30PM	-2	3	2	3	3		1
	11:00PM	-3	2	2	2	2		1
	11:30PM	-3	2	1	2	2		0
3/25	12Midnight	-4	1	1	1	1		0
	12:30AM	-4	1	1	1	1		0
	1:00AM	-3	0	0	1	0		0
	1:30AM	-3	0	0	0	0		-1
	2:00AM	-4	0	0	0	0		-1
	2:30AM	-4	0	0	0	0		-1
	3:00AM	-5	0	0	0	0		-2
	3:30AM	-5	0	0	0	-1		-2
	4:00AM	-5	0	0	0	-1		-2
	4:30AM	-6	-1	-1	-1	-1		-2
	5:00AM	-6	-1	-1	-1	-2		-3
	5:30AM	-6	-1	-1	-1	-2		-3
	6:00AM	-6	-2	-2	-1	-2		-3
	6:30AM	-6	-2	-2	-2	-2		-3
	7:00AM	-6	-2	-2	-2	-2		-4
	7:30AM	-5	-2	-2	-2	-2		-4

TABLE B-XXXIX

AMBIENT AND TANK FUEL TEMPERATURES DURING OVERNIGHT SOAK: 3/26-27/81

<u>Date</u>	<u>Time</u>	<u>Ambient</u>	Temperatures, °C						
			<u>C-121</u>	<u>C-122</u>	<u>C-123</u>	<u>C-124</u>	<u>C-125</u>	<u>C-126</u>	
3/26	5:00PM	5	10	10	11	12	10	17	20
	5:30PM	4	10	9	10	10	10	15	18
	6:00PM	2	9	8	9	8	9	14	16
	6:30PM	1	8	7	7	6	8	12	14
	7:00PM	0	7	6	6	5	7	11	12
	7:30PM	- 1	6	5	5	3	6	9	10
	8:00PM	- 1	5	4	4	2	5	8	9
	8:30PM	- 1	4	3	3	2	5	7	7
	9:00PM	- 1	3	2	2	1	4	6	6
	9:30PM	- 1	2	2	2	0	3	5	5
	10:00PM	- 1	2	1	1	0	2	4	4
	10:30PM	- 3	1	0	0	0	2	3	3
	11:00PM	- 3	0	0	0	0	1	3	2
	11:30PM	- 3	0	0	0	- 1	1	2	1
	3/27		0	0	0	- 1	0	1	1
	- 5	0	- 1	- 1	- 2	0	0	0	
	- 5	- 1	- 1	- 1	- 2	0	0	0	
	- 6	- 1	- 2	- 2	- 3	- 1	0	0	
	- 6	- 2	- 2	- 2	- 3	- 1	- 1	- 1	
	- 7	- 2	- 3	- 3	- 4	- 2	- 1	- 2	
	- 7	- 3	- 3	- 3	- 4	- 2	- 2	- 2	
	- 8	- 3	- 3	- 3	- 4	- 3	- 2	- 2	
	- 8	- 3	- 4	- 4	- 4	- 3	- 3	- 3	
	- 9	- 4	- 4	- 4	- 4	- 3	- 3	- 3	
	- 9	- 4	- 4	- 4	- 4	- 4	- 4	- 3	
	- 9	- 4	- 4	- 4	- 4	- 4	- 4	- 3	

TABLE B-XL

AMBIENT AND TANK FUEL TEMPERATURES DURING OVERNIGHT SOAK: 3/28-29/81

<u>Date</u>	<u>Time</u>	Temperatures, °C						
		<u>Ambient</u>	<u>C-121</u>	<u>C-122</u>	<u>C-123</u>	<u>C-124</u>	<u>C-125</u>	<u>C-126</u>
3/28	9:30PM*	- 2	5	5	4	3	4	7
	10:00PM	- 2	4	5	3	2	4	6
	10:30PM	- 1	4	4	3	2	3	5
	11:00PM	0	3	3	2	1	2	5
	11:30PM	1	3	3	2	1	2	4
3/29	12Midnight	1	2	3	2	1	2	4
	12:30AM	- 1	2	2	1	1	1	3
	1:00AM	- 2	2	2	1	0	1	3
	1:30AM	- 1	1	2	1	0	1	2
	2:00AM	- 2	1	1	0	0	0	1
	2:30AM	0	1	1	0	0	0	1
	3:00AM	0	1	1	0	0	0	1
	3:30AM	0	0	0	0	0	0	0
	4:00AM	0	0	0	0	0	0	0
	4:30AM	0	0	0	0	0	0	0
	5:00AM	0	0	0	0	0	0	0
	5:30AM	0	0	0	0	0	0	0
	6:00AM	0	0	0	0	0	0	0
	6:30AM	0	0	0	0	0	0	0
	7:00AM	0	0	0	0	0	0	0
	7:30AM	0	0	0	0	0	0	0

* Necessary to discard earlier data because of water on thermocouples.

TABLE B-XLI

AMBIENT AND TANK FUEL TEMPERATURES DURING OVERNIGHT SOAK: 3/29-30/81

<u>Date</u>	<u>Time</u>	Temperatures, °C						
		<u>Ambient</u>	<u>C-121</u>	<u>C-122</u>	<u>C-123</u>	<u>C-124</u>	<u>C-125</u>	<u>C-126</u>
3/29	11:00AM	3	10	11		12	7	22
	11:30AM	5	10	10		11	9	
	12 Noon	6	9	9		10	6	21
	12:30PM	5	9	9		9	6	19
	1:00PM	5	8	8		8	6	17
	1:30PM	6	8	8		8	6	15
	2:00PM	6	8	8		7	6	14
	2:30PM	6	8	8		7	6	13
	3:00PM	6	8	7		7	6	12
	3:30PM	6	7	7		7	6	11
	4:00PM	5	7	7		6	6	11
	4:30PM	5	7	7		6	6	10
	5:00PM	5	7	6		6	6	10
	5:30PM	4	7	6		6	6	9
	6:00PM	4	6	6		5	6	9
	6:30PM	4	6	6		5	6	8
	7:00PM	3	6	5		5	6	8
	7:30PM	3	5	5		4	5	7
	8:00PM	2	5	5		4	5	7
	8:30PM	2	5	4		4	5	6
	9:00PM	2	4	4		3	5	6
	9:30PM	2	4	4		3	4	5
	10:00PM	3	4	3		3	4	5
	10:30PM	3	3	3		3	4	5
	11:00PM	2	3	3		2	4	4
	11:30PM	2	3	3		2	4	4
3/30	12Midnight	2	3	3		2	3	4
	12:30AM	1	3	2		2	3	4
	1:00AM	1	2	2		2	3	3
	1:30AM	0	2	2		2	3	3
	2:00AM	0	2	2		1	3	3
	2:30AM	0	2	2		1	2	2
	3:00AM	0	2	1		1	2	2
	3:30AM	0	1	1		1	2	2
	4:00AM	0	1	1		0	2	1
	4:30AM	0	1	1		0	1	1
	5:00AM	0	1	1		0	1	1
	5:30AM	0	1	0		0	1	1
	6:00AM	0	1	0		0	1	1
	6:30AM	0	0	0		0	1	0
	7:00AM	0	0	0		0	1	0

TABLE B-XLII

AMBIENT AND TANK FUEL TEMPERATURES DURING OVERNIGHT SOAK: 3/30-31/81

<u>Date</u>	<u>Time</u>	<u>Ambient</u>	Temperatures, °C					
			<u>C-121</u>	<u>C-122</u>	<u>C-123</u>	<u>C-124</u>	<u>C-125</u>	<u>C-126</u>
3/30	4:00PM	0		2	0	4	5	10
	4:30PM	0		2	0	3	4	8
	5:00PM	0		1	0	2	3	7
	5:30PM	0		1	0	2	3	7
	6:00PM	0		1	0	1	3	6
	6:30PM	0		1	0	1	2	5
	7:00PM	0		0	0	0	2	5
	7:30PM	0		0	0	0	2	4
	8:00PM	0		0	0	0	1	4
	8:30PM	-1		0	0	0	1	3
	9:00PM	0		0	0	0	1	3
	9:30PM	-1		0	0	0	0	2
	10:00PM	-1		0	0	0	0	2
	10:30PM	-2		0	-1	0	0	2
	11:00PM	-2		0	-1	0	0	1
	11:30PM	-2		0	-1	-1	0	1
3/31	12Midnight	-2		0	-2	-1	0	1
	12:30AM	-3		-1	-2	-1	0	0
	1:00AM	-2		-1	-2	-1	0	0
	1:30AM	-3		-1	-2	-1	-1	0
	2:00AM	-4		-1	-2	-2	-1	0
	2:30AM	-3		-1	-2	-2	-1	0
	3:00AM	-4		-1	-2	-2	-1	0
	3:30AM	-5		-2	-2	-2	-2	-1
	4:00AM	-4		-2	-3	-2	-2	-1
	4:30AM	-5		-2	-3	-2	-2	-1
	5:00AM	-5		-2	-3	-2	-2	-2
	5:30AM	-5		-2	-2	-3	-2	-2
	6:00AM	-5		-2	-2	-3	-3	-2
	6:30AM	-5		-2	-3	-3	-3	-2
	7:00AM	-5		-2	-3	-3	-3	-2

TABLE B-XLIII

AMBIENT AND TANK FUEL TEMPERATURES DURING OVERNIGHT SOAK: 4/1-2/81

Date	Time	Temperatures, °C							
		Ambient	C-121	C-122	C-123	C-124	C-125	C-126	
4/1	5:00PM	4	8	9	8	9	8	11	17
	5:30PM	3	8	8	8	8	8	10	14
	6:00PM	4	7	8	8	7	7	10	13
	6:30PM	5	7	7	7	6	7	9	11
	7:00PM	4	7	7	7	6	7	9	10
	7:30PM	2	6	6	6	5	6	8	9
	8:00PM	1	6	5	5	4	6	7	8
	8:30PM	1	5	5	5	3	5	7	7
	9:00PM	0	4	4	4	2	5	6	6
	9:30PM	- 1	3	3	3	1	4	5	5
	10:00PM	- 1	3	2	2	1	3	4	4
	10:30PM	- 1	2	1	1	0	3	3	3
	11:00PM	- 2	1	1	1	0	2	3	2
	11:30PM	- 1	1	0	0	0	1	2	2
4/2	12Midnight	- 2	0	0	0	- 1	1	1	1
	12:30AM	- 2	0	0	0	- 1	0	1	1
	1:00AM	- 1	0	0	0	- 1	0	0	0
	1:30AM	- 2	0	0	0	- 1	0	0	0
	2:00AM	- 2	0	0	0	- 1	0	0	0
	2:30AM	- 1	0	0	0	- 1	0	0	0
	3:00AM	- 1	0	0	- 1	- 1	0	0	0
	3:30AM	- 2	0	- 1	- 1	- 1	0	0	0
	4:00AM	- 1	0	- 1	- 1	- 1	0	0	0
	4:30AM	- 2	- 1	- 1	- 1	- 1	0	0	0
	5:00AM	- 2	- 1	- 1	- 1	- 1	0	0	- 1
	5:30AM	- 1	- 1	- 1	- 1	- 1	- 1	0	- 1
	6:00AM	- 3	- 1	- 1	- 1	- 1	- 1	- 1	- 1
	6:30AM	- 3	- 1	- 1	- 1	- 2	- 1	- 1	- 1
	7:00AM	- 3	- 1	- 1	- 1	- 2	- 1	- 1	- 1

TABLE B-XLIV

AMBIENT AND TANK FUEL TEMPERATURES DURING OVERNIGHT SOAK: 4/2-3/81

<u>Date</u>	<u>Time</u>	Temperatures, °C						
		<u>Ambient</u>	<u>C-121</u>	<u>C-122</u>	<u>C-123</u>	<u>C-124</u>	<u>C-125</u>	<u>C-126</u>
4/2	5:00PM	3	7	6	8		7	10
	5:30PM	3	7	6	7		7	8
	6:00PM	3	7	5	7		7	14
	6:30PM	2	6	5	6		6	12
	7:00PM	1	6	4	6		6	10
	7:30PM	1	5	4	5		5	9
	8:00PM	0	5	4	5		5	8
	8:30PM	1	4	3	4		4	7
	9:00PM	1	4	3	4		4	6
	9:30PM	0	3	2	3		4	5
	10:00PM	0	3	2	3		3	4
	10:30PM	0	3	2	2		3	4
	11:00PM	1	2	1	2		3	3
	11:30PM	1	2	1	2		2	3
4/3	12Midnight	2	1	2	2		2	2
	12:30AM	0	1	1	1		2	2
	1:00AM	1	1	1	1		2	2
	1:30AM	0	1	1	1		2	2
	2:00AM	0	1	1	1		2	1
	2:30AM	0	1	0	1		1	1
	3:00AM	0	1	0	1		1	1
	3:30AM	0	1	0	1		1	1
	4:00AM	-1	0	0	0		1	0
	4:30AM	-1	0	0	0		1	0
	5:00AM	-1	0	0	0		1	0
	5:30AM	0	0	0	0		0	0
	6:00AM	0	0	0	0		0	0
	6:30AM	0	0	0	0		0	0
	7:00AM	0	0	0	0		0	0

TABLE B-XLV

AMBIENT AND TANK FUEL TEMPERATURES DURING OVERNIGHT SOAK: 4/3-4/81

<u>Date</u>	<u>Time</u>	Temperatures, °C						
		<u>Ambient</u>	<u>C-121</u>	<u>C-122</u>	<u>C-123</u>	<u>C-124</u>	<u>C-125</u>	<u>C-126</u>
4/3	5:00PM	4	9	10	10	9	9	11
	5:30PM	3	9	9	9	8	8	10
	6:00PM	3	8	8	8	7	8	10
	6:30PM	1	7	7	7	6	7	9
	7:00PM	0	7	6	6	5	6	8
	7:30PM	0	6	5	6	4	6	7
	8:00PM	0	5	4	5	3	5	7
	8:30PM	0	4	4	4	3	5	6
	9:00PM	-1	4	3	3	2	4	5
	9:30PM	-1	3	2	2	1	3	5
	10:00PM	-2	2	1	2	0	3	4
	10:30PM	-2	2	1	1	0	2	3
	11:00PM	-3	1	0	0	0	2	3
	11:30PM	-3	0	0	0	0	1	2
4/4	12Midnight	-3	0	0	0	-1	0	1
	12:30AM	-4	0	0	0	-1	0	1
	1:00AM	-4	0	-1	-1	-1	0	0
	1:30AM	-4	-1	-1	-1	-1	0	0
	2:00AM	-4	-1	-2	-1	-2	0	0
	2:30AM	-5	-1	-2	-2	-2	-1	0
	3:00AM	-5	-1	-2	-2	-2	-1	-1
	3:30AM	-5	-2	-3	-2	-2	-2	-1
	4:00AM	-6	-2	-3	-2	-3	-2	-2
	4:30AM	-6	-2	-3	-3	-3	-2	-3
	5:00AM	-7	-2	-4	-3	-3	-3	-2
	5:30AM	-6	-3	-4	-4	-3	-3	-3
	6:00AM	-7	-3	-4	-4	-4	-3	-4
	6:30AM	-7	-3	-4	-4	-4	-4	-4
	7:00AM	-7	-3	-5	-4	-4	-4	-4
	7:30AM	-7	-4	-5	-4	-4	-4	-4

TABLE B-XLVI

AMBIENT AND TANK FUEL TEMPERATURES DURING OVERNIGHT SOAK: 4/7-8/81

Date	Time	Temperatures, °C						
		Ambient	C-121	C-122	C-123	C-124	C-125	C-126
4/7	3:00PM	7	8	8	9	8	11	9
	3:30PM	7	8	8	9	8	10	9
	4:00PM	8	8	8	9	8	10	8
	4:30PM	7	8	8	9	8	11	8
	5:00PM	8	8	8	9	8	11	7
	5:30PM	7	8	8	8	7	10	7
	6:00PM	6	8	8	8	7	9	6
	6:30PM	5	8	7	8	7	9	6
	7:00PM	4	7	7	7	6	8	5
	7:30PM	4	7	7	7	6	7	4
	8:00PM	3	7	6	7	6	7	4
	8:30PM	3	6	6	6	5	6	4
	9:00PM	2	6	5	6	5	6	3
	9:30PM	3	5	5	5	4	5	3
	10:00PM	2	5	4	5	4	5	3
	10:30PM	2	5	4	4	4	4	2
	11:00PM	2	4	4	4	3	4	2
	11:30PM	1	4	3	4	3	3	2
4/8	12Midnight	1	4	3	3	3	3	2
	12:30AM	1	3	3	3	2	3	1
	1:00AM	1	3	3	3	2	2	1
	1:30AM	1	3	2	2	2	2	1
	2:00AM	0	3	2	2	2	2	1
	2:30AM	0	2	2	2	2	1	0
	3:00AM	-2	2	2	2	1	1	0
	3:30AM	-2	2	1	1	1	1	0
	4:00AM	-3	1	1	1	1	0	0
	4:30AM	-2	1	0	1	0	0	0
	5:00AM	-4	1	0	0	0	0	0
	5:30AM	-3	0	0	0	0	0	-1
	6:00AM	-4	0	0	0	0	0	-1
	6:30AM	-3	0	0	0	0	0	-1
	7:00AM	-1	0	0	0	0	0	-1
	7:30AM	0	0	0	0	0	0	0
	8:00AM	4	0	0	0	0	0	0
	8:30AM	5	0	0	0	0	0	0
	9:00AM	8	0	0	0	0	1	1
	9:30AM	8	1	0	0	0	1	2

TABLE B-XLVII

AMBIENT AND TANK FUEL TEMPERATURES DURING OVERNIGHT SOAK: 4/8-9/81

<u>Date</u>	<u>Time</u>	Temperatures, °C						
		<u>Ambient</u>	<u>C-121</u>	<u>C-122</u>	<u>C-123</u>	<u>C-124</u>	<u>C-125</u>	<u>C-126</u>
4/8	5:30PM	9	14	12	14	13		16 21
	6:00PM	7	13	12	14	13		15 18
	6:30PM	5	13	11	13	12		14 16
	7:00PM	5	12	10	12	11		14 14
	7:30PM	3	11	10	11	10		13 13
	8:00PM	2	10	9	10	9		12 11
	8:30PM	0	9	8	10	8		11 10
	9:00PM	0	9	8	9	8		10 8
	9:30PM	0	8	7	8	7		9 7
	10:00PM	- 1	7	6	7	6		8 6
	10:30PM	4	6	6	6	6		7 6
	11:00PM	3	6	5	6	5		7 5
	11:30PM	2	5	5	5	5		6 5
4/9	12Midnight	2	5	4	5	4		6 4
	12:30AM	2	4	4	4	4		5 4
	1:00AM	2	4	3	3	3		5 3
	1:30AM	2	3	3	3	3		4 3
	2:00AM	2	3	3	3	3		4 2
	2:30AM	1	2	2	2	2		3 2
	3:00AM	- 1	2	2	2	2		3 1
	3:30AM	- 2	2	2	2	2		2 1
	4:00AM	- 3	1	1	1	1		2 0
	4:30AM	- 3	1	1	1	1		1 0
	5:00AM	- 4	1	1	0	0		1 0
	5:30AM	- 3	0	0	0	0		0 - 1
	6:00AM	- 5	0	0	0	0		0 - 1
	6:30AM	- 4	0	0	0	0		0 - 1
	7:00AM	- 2	0	0	0	0		0 - 1

TABLE B-XLVIII

AMBIENT AND TANK FUEL TEMPERATURES DURING OVERNIGHT SOAK: 4/9-10/81

<u>Date</u>	<u>Time</u>	Temperatures, °C						
		<u>Ambient</u>	<u>C-121</u>	<u>C-122</u>	<u>C-123</u>	<u>C-124</u>	<u>C-125</u>	<u>C-126</u>
4/9	5:30PM	7	10	10	10	11		14
	6:00PM	7	10	10	10	10	14	18
	6:30PM	5	10	9	9	10	13	16
	7:00PM	6	9	9	9	9	12	15
	7:30PM	4	9	8	8	8	11	14
	8:00PM	2	8	8	8	7	10	12
	8:30PM	2	8	7	7	7	10	11
	9:00PM	1	7	7	7	6	9	10
	9:30PM	0	6	6	6	6	8	9
	10:00PM	0	6	6	6	5	7	8
	10:30PM	-2	5	5	5	5	6	7
	11:00PM	-2	4	4	4	4	6	6
	11:30PM	-1	4	4	4	4	5	6
4/10	12Midnight	0	3	3	3	3	4	5
	12:30AM	0	3	3	3	3	4	4
	1:00AM	0	2	2	2	2	3	3
	1:30AM	0	2	2	2	2	3	3
	2:00AM	0	2	2	1	1	2	3
	2:30AM	0	1	2	1	1	2	2
	3:00AM	0	1	1	1	1	1	2
	3:30AM	-2	1	1	1	1	1	1
	4:00AM	-4	0	0	0	0	1	1
	4:30AM	-3	0	0	0	0	0	1
	5:00AM	-4	0	0	0	0	0	0
	5:30AM	-4	0	0	0	0	0	0
	6:00AM	-4	0	0	0	0	0	0
	6:30AM	-4	-1	0	0	0	0	0
	7:00AM	-2	-1	0	-1	0	0	0
	7:30AM	0	-1	-1	-1	-1	-1	0